

1 APPARATUS, SYSTEMS AND METHODS FOR ONLINE, MULTI-PARCEL, MULTI-
2 CARRIER, MULTI-SERVICE ENTERPRISE PARCEL SHIPPING MANAGEMENT

3
4 FIELD OF THE INVENTION

5 The field of the present invention is computer systems for shipping management, and
6 specifically online computer systems for enterprise parcel shipping management.

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8 CROSS REFERENCE TO RELATED APPLICATIONS

9 Priority is claimed to U.S. Provisional Patent Application, Serial No. 60/192,723 filed
10 March 27, 2000, and U.S. Provisional Patent Application Serial No. 60/193,899 filed March 31,
11 2000, the disclosures of which are incorporated for all purposes herein by reference as if fully
12 stated here.

13 Reference is further made to U.S. Patent Application Serial Nos. 09/684,010 (Online,
14 Multi-Carrier, Multi-Service Parcel Shipping Management Functional Alignment of Computer
15 Devices), 09/684,871 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-
16 Service Parcel Shipping Management Featuring Shipping Location Comparison Across Multiple
17 Carriers), 09/684,870 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-
18 Service Parcel Shipping Management Featuring Parcel Handling Rules Comparison Across
19 Multi-le Carriers), 09/684,808 (Apparatus, Systems and Methods for Interfacing with Digital
20 Scales Configured with Remote Client Computer Devices), 09/684,869 (Reporting Shipping
21 Rates and Delivery Schedules for Multiple Service and Multiple Carriers), 09/685,078
22 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel Shipping
23 Management Featuring Notification Service Option Comparison for Multiple Carriers),
24 09/680,649 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel
25 Shipping Management Featuring Delivery Service Option Comparison for Multiple Carriers),
26 09/680,654 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel
27 Shipping Management featuring Shipping Rate and Delivery Schedule Comparison for Multiple
28 Carriers), 09/684,865 (Apparatus, Systems and Methods for Applying Billing Options for
29 Multiple Carriers for Online, Multi-Carrier, Multi-Service Parcel Shipping Management),
30 09/685,077 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel

Shipping Management Determination of Ratable Weight for Multiple Carriers), 09/684,014 (Apparatus, Systems and Methods for Zone Level Rating for each of Multiple Carriers), 09/684,861 (Apparatus, Systems and Methods for Determining Delivery Time Schedules for each of Multiple Carriers), 09/684,152 (Apparatus, Systems and Methods for Printing Dimensionally Accurate Symbologies on Laser Printers Configured with Remote Client Computer Devices), 09/684,866 (Apparatus, Systems and Methods for Online, Multi-Carrier, Multi-Service Parcel Shipping Management), all of which were filed October 6, 2000 the disclosures of all of which are incorporated for all purposes herein by reference as if fully stated here, U.S. Patent Application Serial No. 09/651,390 (Virtualized Printing of Indicia, Logos and Graphics) filed August 29, 2000, U.S. Patent Application Serial No. 09/651,389 (Method and Apparatus for Printing Indicia Logos and Graphics Onto Print Media) filed August 29, 2000, and U.S. Patent Application Serial No. _____ (attorney docket number PSTM0042/MRK Apparatus, Systems and Methods for Online, Multi-Parcel, Multi-Carrier, Multi-Service Parcel Returns Shipping Management) filed on even date herewith, the disclosure of which is incorporated for all purposes herein by reference as if fully stated here.

BACKGROUND OF THE INVENTION

Major corporations, small businesses and individuals (the "Shipper(s)") ship billions of parcels every year. Each parcel carrier (the "Carrier(s)") has its own unique rating schedule, delivery and pickup rules and schedules, and certification requirements.

Within an enterprise, such as a corporation or governmental entity, a parcel to be shipped may pass through a number of different individuals and departments within the organization before shipment is accomplished. In a paper-based or non-integrated shipping system environment, the enterprise suffers lower productivity due to several employees within the enterprise repeatedly writing or entering the same or similar information. Consider the following illustrative example.

A customer service employee in the customer service department of a corporation is contacted by one of the corporation's customers. The customer orders a replacement part for a product previously purchased from the corporation. In a telephone conversation, the customer service employee records in writing shipping and payment information about the

1 customer and the customer's order for the particular replacement part. The customer agrees to
2 pay for shipping as well as for the replacement part. The customer service employee forwards
3 the order and the shipping and payment information to the parts department. An employee in
4 the parts department receives the order and the shipping and payment information. The parts
5 department employee locates the replacement part, forwards the replacement part and shipping
6 instructions to the shipping department and forwards the payment information to the accounting
7 department for processing. The shipping department employee writes, or enters into a
8 computer, much of the same information that was previously recorded by other employees of
9 the same corporation, and analyzes any specific shipping requirements specified by the
10 customer, to complete paperwork to ship the package in accordance with the corporation's
11 shipping policies. The shipping department employee notifies the accounting department of the
12 amount to be charged for shipping. An accounting department employee enters the payment
13 information into a computer accounting system, processes the payment for the part and for the
14 shipping, and sends a notification to the shipping department that payment for the part and for
15 shipping the part has been processed.

16 In the illustrative example above and as is the case in many enterprises, the shipping
17 origination employee, the customer service employee, is not a shipping professional. Nor are
18 the shipping intermediaries, such as the parts department and accounting department
19 employees. Such shipping origination and shipping intermediary employees may arrange for
20 only a single shipment a day, or may need to ship many packages at once. Such shipping
21 origination or shipping intermediary employees are often unfamiliar with shipping industry
22 terms, and require that shipping options be described explained in plain English. They do not
23 know or may often not remember corporate shipping policies such as which carrier to use
24 under certain circumstances, what account number should be used, whether to enter charge-
25 back codes, whether to fill in the declared value, etc. They may record the improper
26 information on shipping requests.

27 Mailroom and shipping dock personnel, such as the shipping department employee
28 described above, are, more than likely, professional shippers. They will be trained on the
29 shipping policies and procedures for the organization, and part of their job may entail
30 enforcing such policies and procedures. They may be familiar with the shipping system of at

1 least one carrier. They spend significant amounts of time transcribing information from paper-
2 based shipping requests onto Carrier airbills or into Carrier systems and often correcting, if
3 they catch them, mistakes made by shipping origination or intermediary employees in
4 recording shipping request information.

5 Shipping Managers set shipping policies for the enterprise. They are in charge of cost
6 centers. Because they run cost centers and do not generate revenue for their company, they are
7 sometimes rewarded on their ability to save money. Their job revolves around reducing costs
8 and assigning costs to the appropriate department. Because their job is to reduce costs,
9 Shipping Managers are not typically receptive to purchasing system solutions that have high
10 system Total Cost of Ownership.

11 Shipping Management may work at different levels or locations within their
12 organization. Some shipping management personnel may only need to review reports, while
13 others may be responsible for coordinating with carriers, monitoring rates and establishing
14 employee-user shipping privileges for each of possibly several corporate locations. Shipping
15 Management Support Staff are responsible for routine administrative tasks.

16 Many enterprise shipping departments ("Enterprise Shippers") manually refer to a
17 mixture of separate, individual paper-based and online systems (a "non-integrated multiple
18 standalone Carrier system environment") to determine the rate for shipping a particular parcel
19 and to determine the optimal carrier with which to ship that particular parcel according to the
20 constraints and requirements involved. With regard to shipping a particular parcel, Enterprise
21 Shippers must consider a combination of factors, including but not limited to parcel
22 dimensions, parcel weight, origin/ destination specifications, parcel value, parcel value loss
23 protection, budgetary, timing, pickup, delivery, delivery notification, delivery service, and
24 other service option constraints and requirements.

25 In a non-integrated multiple standalone Carrier system environment, effective
26 comparison shopping across multiple carriers is generally difficult and time-consuming. Many
27 enterprise shipping departments rely instead on one or two familiar Carriers rather than
28 comparison shopping each parcel across multiple Carriers.

29 Once an enterprise shipping department employee (also "Enterprise Shipper") selects a
30 particular Carrier, the Enterprise Shipper must label the parcel with the information

1 appropriate for the selected Carrier. In a non-integrated multiple standalone Carrier system
2 environment, the Enterprise Shipper must interpret and apply a particular Carrier's rules and
3 requirements in order to prepare the necessary manifest documents to ship a particular parcel.

4 An Enterprise Shipper that deals with a particular Carrier on a recurring basis may set
5 up an account with the particular Carrier ("Enterprise Account-Holder Shippers"). Some
6 Carriers provide Enterprise Account-Holder Shippers with a copy of that Carrier's software
7 system if one exists. Each individual Carrier's software system has its own unique look and
8 feel.

9 Rather than learn multiple standalone Carrier systems, some Enterprise Shippers choose
10 instead to rely on a manual system, including the manual preparation of parcel labels; some
11 develop a dependency on a single Carrier-provided system even though such a policy often
12 results in non-optimal shipping costs.

13 An Enterprise Shipping Management solution is needed that increases shipping
14 origination, shipping intermediary, and shipping user productivity and that reduces shipping
15 costs, improves shipping management, and has a low system Total Cost of Ownership.

17 SUMMARY OF THE INVENTION

18 The present invention provides a computer system (the "System", or the "Enterprise
19 Shipping System") that is configured and programmed to provide enterprises, such as, for
20 example, large corporations, governmental entities, and retail shipping entities, with online,
21 multi-parcel, multi-carrier, multi-service enterprise parcel shipping management. The present
22 invention provides a plurality of Enterprises with a single online user interface with which the
23 Enterprise can provide Enterprise Shippers, shipping origination users and shipping
24 intermediary users with an automated parcel management system for a plurality of supported
25 Carriers for a plurality of services. The present invention provides for the hierarchical
26 definition of users, including the establishment of at least one user for each Enterprise as a
27 Super-Administrator with the highest level of privileges and authority for the Enterprise, and
28 the identification of other users as Sub-Administrators, Desktop Users and Shipping Station
29 Users. The present invention also provides for the hierarchical definition of organizational
30 units within each Enterprise, including the definition of sites, groups within a site, and users

1 within a group. The present invention further provides for a distinct definition of policies,
2 privileges, and other types of specifications for each user level, each user, and each
3 organizational unit. The present invention applies the user and organizational policies,
4 privileges and other specifications as they apply to each particular user to drive the interactive
5 interface with each particular user and to provide among other things, shipping options,
6 shipping services, shipping rates, traveler and/or shipping label preparation, and shipment
7 tracking.

8 The System prompts a user, authorized by a particular enterprise as an administrator, to
9 input a set of shipping policy rules. The System collects the shipping policy rules and stores
10 them in System databases. Shipping policy rules, shipping privileges, and related options
11 established by an administrator are sometimes collectively referred to herein as shipping
12 parameter specifications.

13 The System prompts each user to input user preferences for shipping. Each user can
14 accept as defaults the preference settings established by the administrator. In the alternative,
15 the user can set personal preferences. However, the System only allows users to set
16 preferences that are a subset of the shipping policy rules set by the administrator.

17 The System prompts each user to input information about a package to be shipped and
18 to input information about how the user wants the package to be shipped. Each parcel to be
19 shipped is characterized by a set of package criteria. Each shipping request is characterized by
20 a set of parcel shipping criteria. The System only allows the user to ship packages according to
21 the shipping policy rules set by the administrator.

22 The System provides Enterprise Shippers with an online display comparison of multiple
23 services offered by multiple carriers for a particular parcel from which the lowest cost or
24 fastest delivery Carrier and Service can be selected by, or dictated to, origination and/or
25 intermediary shippers. In one embodiment of the invention, the online display comparison is
26 in the form of an expandable and contractible array. The user places a shipping order by
27 selecting an entry from the comparison array (also referred to herein as the "Grid").

28 The System generates an internal system tracking number for the shipping order, and
29 saves the internal system tracking number for the shipping order in a database.

1 The System generates a graphic representation of a shipping label corresponding to a
2 particular shipping order and displays the graphic representation of the shipping label on a
3 display monitor connected to a computer accessible by the user.

4 The System generates a set of printable shipping label data in response to a shipping
5 label print request by a user and sends the set of printable shipping label data to a printer
6 connected to the computer accessible by the user.

7 Each shipping order with a tracking number is characterized by a shipping status. The
8 System generates a tracking report record depicting the shipping status of a shipping order in
9 response to a user tracking report request for the shipping order.

10 The System increases user productivity with an easy to understand, wizard-like,
11 browser-based interface featuring, among other things, personal, department, and corporate
12 address books, shipping history with integrated tracking, common User Interface across
13 multiple carriers, desktop label printing, shipment pre-processing, and in some embodiments,
14 completion of international shipment documentation requirements.

15 Centralized reports provide Shipping Managers with the information required to
16 negotiate the most favorable rates with Carriers and to audit Carrier performance. Centralized
17 policy enforcement and reports improve chargebacks and cost reporting by more effectively
18 implementing and enforcing shipping policies and procedures.

19 The total cost of ownership is low in that the preferred embodiment of the invention
20 uses an ASP (Application Service Provider) model that provides inexpensive centralized
21 maintenance of Carriers and standard rates, and centralized administration of users and
22 shipping policy logic.

23 The System provides Enterprise Administrative features with which Shipping
24 Management, among other things, defines an enterprise's policies, authorizes certain user
25 privileges at various levels, and identifies reporting requirements.

26 The System also provides Enterprise Desktop features which facilitate desktop rating,
27 shipping, and tracking by shipping origination and intermediary users and by Enterprise
28 Shippers, in accordance with enterprise policies and procedures.

30 DESCRIPTION OF THE DRAWINGS

1 These and other features of the present invention are more fully set forth in the following
2 description of exemplary embodiments of the invention. The description is presented with
3 reference to the accompanying drawings in which:

4 FIG. 1 is a graphic representation depicting the interface relationships provided by the
5 System of the present invention between origination shippers, intermediary shippers,
6 Enterprise Shippers and Carriers;

7 FIG. 2 is a graphic representation depicting an exemplary user computer configuration
8 and the computer's interfaces with the System;

9 FIG. 3 is a graphic representation of an exemplary configuration of the System, and
10 relationships with Carriers and Enterprise users;

11 FIG. 4 is a high level System component diagram depicting an exemplary System
12 Architecture in an exemplary embodiment of the System in an Internet environment;

13 FIG. 5 is a high level System interactivity data and logic flow diagram depicting an
14 exemplary embodiment of the process by which the System establishes shipping policies set by
15 an Administrator and then enables features for Desktop Users according to the pre-established
16 shipping policies;

17 FIG. 6 is a graphic representation depicting an illustrative example of an Administrator
18 establishing privileges for a number of groups of users;

19 FIG. 7 is a graphic representation depicting an exemplary Log On System Screen in an
20 exemplary embodiment of the invention;

21 FIGS. 8 through 11 are graphic representations of exemplary Password Recovery
22 Screens in an exemplary embodiment of the invention;

23 FIG. 12 is a graphic representation of an exemplary home page for an exemplary
24 embodiment of the invention once an Enterprise User has successfully Logged On;

25 FIG. 13 is a graphic representation of an exemplary Address Book List View Screen in
26 an exemplary embodiment of the invention;

27 FIG. 14 is a graphic representation of an exemplary Address Book Edit View Screen in
28 an exemplary embodiment of the invention;

29 FIG. 15 is a graphic representation of an exemplary Locations List View Screen in an
30 exemplary embodiment of the invention;

1 FIG. 16 is a graphic representation of an exemplary Preferences Summary Screen in an
2 exemplary embodiment of the invention;

3 FIG. 17 is a graphic representation of an exemplary Account Information Preferences
4 Screen in an exemplary embodiment of the invention;

5 FIG. 18 is a graphic representation of an exemplary Carrier Preferences Screen in an
6 exemplary embodiment of the invention;

7 FIG. 19 is a graphic representation of an exemplary Drop Off/Pickup Preferences
8 Screen in an exemplary embodiment of the invention;

9 FIG. 20 is a graphic representation of an exemplary Package Options Preferences
10 Screen in an exemplary embodiment of the invention;

11 FIG. 21 is a graphic representation of an exemplary Shipment Options Preferences
12 Screen in an exemplary embodiment of the invention;

13 FIG. 22 is a graphic representation of an exemplary Applications Preferences Screen in
14 an exemplary embodiment of the invention;

15 FIG. 23 is a graphic representation of an exemplary Payment Information Preferences
16 Screen in an exemplary embodiment of the invention;

17 FIG. 24 is a graphic representation of an exemplary Price It Start Page in an exemplary
18 embodiment of the invention;

19 FIG. 25 is a graphic representation of an exemplary Price It Shipping Estimate Screen
20 in an exemplary embodiment of the invention;

21 FIG. 26 is a graphic representation of an exemplary Drop Off Locator Screen in an
22 exemplary embodiment of the invention;

23 FIG. 27 is a graphic representation of an exemplary Shipping Addresses Screen in an
24 exemplary embodiment of the invention;

25 FIG. 28 is a graphic representation of an exemplary Shipping Payment Screen in an
26 exemplary embodiment of the invention;

27 FIG. 29 is a graphic representation of an exemplary Order History display for a particular
28 Customer in a particular Merchant's Online store;

1 FIGS. 30a through 30c are logic flow diagrams depicting an exemplary high level logic flow
2 for a Consumer's experience with an exemplary embodiment of the Returns System of the present
3 invention from within a Merchant's Online store;

4 FIG. 31 is a graphic representation of an exemplary Order Summary Screen for a particular
5 Order Number for a particular Consumer from within a particular Merchant's Online store in an
6 exemplary embodiment of the invention;

7 FIG. 32 is a graphic representation depicting an exemplary Returns Service Screen in an
8 exemplary Merchant's Online store in an exemplary embodiment of the invention;

9 FIG. 33 is a graphic representation of an exemplary Standard Policy Screen in an exemplary
10 embodiment of the invention;

11 FIG. 34 is a high level data and logic flow diagram depicting an overview flow of the
12 Returns System flow in an exemplary embodiment of the invention;

13 FIG. 35 is a high level data and logic relationship diagram depicting an exemplary Situation
14 Response flow in an exemplary embodiment of the invention;

15 FIG. 36 is a high level interactivity diagram depicting an exemplary embodiment of the
16 interactivity of the Customer Returns Subsystem between a Consumer's Client Machine, Customer
17 Returns Page, various Customer Returns Subsystem functions, and the Return System servers in an
18 exemplary embodiment of the invention;

19 FIG. 37 is a graphic representation of an exemplary Returns Service Return Reason Screen in
20 an exemplary embodiment of the invention;

21 FIG. 38 is a graphic representation of an exemplary Return Summary Screen in an exemplary
22 embodiment of the invention;

23 FIGS. 39a -39c are high level logic flow diagrams depicting control communications
24 with client machine peripheral devices in an exemplary embodiment of the System in an
25 Internet environment;

26 FIG. 40 is a graphic representation of an exemplary multi-carrier, multi-service
27 shipping rates comparison Preview Rates Screen Graphic Array in an exemplary embodiment
28 of the invention;

29 FIG. 41 is a graphic representation of an exemplary Shipping Options Screen in an
30 exemplary embodiment of the invention;

1 FIG. 42 is a graphic representation depicting an alternative exemplary embodiment of a
2 dynamically dimensioned, multi-carrier, multi-service shipping rates comparison Graphic
3 Array in an exemplary embodiment of the invention;

4 FIGS. 43, 44a through 44b, and 45 are high level data retrieval logic flow diagrams
5 depicting the data and high level logic that the system uses to calculate a shipping rate;

6 FIGS. 46a through 46c are high level flow diagrams depicting the initial timing and
7 rating logic to develop a dynamically dimensioned, multi-carrier, multi-service shipping rates
8 comparison Graphic Array in an exemplary embodiment of the System in an Internet
9 environment;

10 FIG. 47 is a graphic representation depicting an exemplary embodiment of the Create a
11 Link Screen in an exemplary embodiment of the invention;

12 FIG. 48 is a graphic representation depicting an exemplary embodiment of the Name a
13 Save Package Screen in an exemplary embodiment of the invention;

14 FIG. 49 is a graphic representation depicting an exemplary embodiment of the Name a
15 Save Package Error Screen in an exemplary embodiment of the invention;

16 FIG. 50 depicts the text of an exemplary hypertext link such as is created by an
17 exemplary embodiment of the "Create Link" feature in an exemplary embodiment of the
18 invention;

19 FIG. 51 is a graphic representation depicting an alternative embodiment of a hyperlink
20 generated by the System in an exemplary embodiment of the invention;

21 FIG. 52 is a graphic representation of an exemplary Shipping Label Display Screen in
22 an exemplary embodiment of the invention;

23 FIG. 53 is a high level flow diagram depicting an exemplary embodiment of Label
24 Printing in an exemplary embodiment of the System in an Internet environment;

25 FIG. 54 is a high level flow diagram depicting an exemplary embodiment of Image
26 Printing in an exemplary embodiment of the System in an Internet environment;

27 FIG. 55 is a high level System interactivity data and logic flow diagram depicting an
28 exemplary embodiment of the process by which the System completes the information
29 necessary to ship a package in an exemplary embodiment of the System using traveler labels
30 delivered to a Shipping Station;

1 FIG. 56 is a graphic representation depicting an exemplary Traveler Label in an
2 exemplary embodiment of the invention;

3 FIG. 57 is a graphic representation depicting an exemplary Shipping Request
4 Confirmation Screen in an exemplary embodiment of the invention;

5 FIG. 58 is a graphic representation of an exemplary Track It application Track a
6 Shipment Screen in an exemplary embodiment of the invention;

7 FIGS. 59 and 60 are graphic representations of an exemplary Tracking Results Screen
8 in an exemplary embodiment of the invention;

9 FIG. 61 is a graphic representation of an exemplary Unable to Track Screen in an
10 exemplary embodiment of the invention;

11 FIG. 62 is a graphic representation depicting an exemplary Tracking Information
12 Screen in an exemplary embodiment of the invention;

13 FIG. 63 is a graphic representation of an exemplary Shipping History Screen in an
14 exemplary embodiment of the invention;

15 FIG. 64 is a graphic representation of a Shipper online user input screen that is
16 displayed on the Shipper's display screen in an exemplary embodiment of the invention;

17 FIG. 65 is a logic flow diagram that depicts the high level logic for tracking the status
18 of a particular package in an exemplary embodiment of the invention;

19 FIG. 66 depicts an exemplary XML formatted request for submitting a tracking request
20 to a Carrier in an exemplary embodiment of the invention; and

21 FIG. 67 depicts an exemplary successful tracking response, also in XML format,
22 returned by the Carrier in an exemplary embodiment of the invention.

23 24 DETAILED DESCRIPTION OF THE INVENTION

25 A portion of the disclosure of this patent document, including but not limited to the
26 renderings of graphic user interface displays in the FIGURES, contains material which is
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4 trademarks of their respective owners.

5 The computer System of the present invention provides a plurality of Enterprises with a
6 single online user interface with which the Enterprise can provide Enterprise Shippers,
7 shipping origination users and shipping intermediary users (“Enterprise Users”, or simply
8 “Users”) with an automated parcel management system for a plurality of supported Carriers
9 for a plurality of services.

10 FIG. 1 is a graphic representation depicting the interface relationships provided by the
11 System 1 of the present invention between a plurality of Enterprises 2a-2n, and Carriers 4a-4n.
12 It should be noted that the use of suffixes such as “a” through “n” in connection with
13 numbered elements of the FIGURES herein are exemplary and are not a limitation of the
14 invention. Rather, the suffixes “a” through “n” are used to represent a plurality, but
15 unknown number, of similar elements.

16 Carriers 4a-4n supported by the System include Carriers such as Airborne, FedEx,
17 United Parcel Service, USPS, and Yellow Freight. The System 1 is completely expandable
18 and scalable to include additional Carriers 4a-4n and additional Enterprises 2a-2n.

19 As depicted in FIG. 2, each Enterprise User 7 (which may be a Shipping Manager, an
20 Enterprise Shipper, a shipping origination user, or a shipping intermediary user) has access to
21 a computer 8, for instance a personal computer (“PC”). The computer 8 is configured with a
22 display device 9 that provides a display screen 10. The computer 8 is further configured with
23 one or more user input devices, such as, for example, a keyboard 11 and a mouse 12. The
24 computer 8 is also configured with a printing device 13, such as a laser printer. If the computer
25 device 8 serves as a Shipping Station, the computer 8 may be further configured with a
26 weighing device such as a scale 1024 and a bar code reader 1027.

27 Enterprise Users access and browse the Internet 15 using a web browser 14 that
28 generally resides and is executed on the user’s PC 8 (with Windows 95, 98, NT 4.0, or 2000
29 Professional). The web browser 14 (such as Internet Explorer™ 4.0+, or Netscape

Navigator™ 4.0+) allows the Enterprise User 7 to retrieve and render hyper-media content from one or more System Server computers, e.g., 20a-21z.

FIG. 3 is a graphic representation depicting an exemplary view of the System Data Center and its interfaces with Enterprise computers 8a-8n, and Carrier Server computers 23-2 through 27-2, via the Internet 15.

As depicted in FIG. 3, the System provides a plurality of server computers 20a-21z (“servers” or “server computers”). Some of the server computers are configured as Web servers, e.g., 21m-21r. The Web servers 21m-21r are configured to perform multi-parcel, multi-carrier, multi-service parcel shipping management functions. The Web servers 21m-21r are sometimes referred to herein as “shipping servers” or “shipping Web servers”.

Other servers are configured as Database Servers. In an exemplary embodiment of the invention, the Database Servers are SQL Servers. Some of the Database Servers are configured to access Rating Database Data. The Database Servers that are configured to access Rating Database Data are referred to as the Rating Servers.

The Web server computers communicate through the Internet with client computers. The client computers are used by shippers to interact with a user interface provided by the system.

In the exemplary embodiment of the invention, the system further provides at least one server computer that acts as a scheduler or “Load Balancer”. The Load Balancer selects one of the plurality of shipping Web servers 21m-21r based on the load of work performed by that selected shipping Web server as compared to the other shipping Web servers. The Load Balancer directs incoming data to the selected shipping Web server for processing.

An overview of an exemplary System architecture is depicted in FIG. 4. The overview depicted is exemplary and meant to be illustrative; it is not a limitation of the invention. As depicted in FIG. 4, one embodiment of the invention uses a three-tiered architecture.

The Data Management Tier 1201 is comprised of a Database Storage component 1202 that in the embodiment depicted uses an SQL Server; a Message Queue Storage component 1203 that in the embodiment depicted uses MS Message Queue; and a File Storage component 1204 that in the embodiment depicted uses NTFS, and DFS. Each of the Database Storage component 1202, the Message Queue Storage component 1203, and the File Storage

1 component 1204, communicate with the Component Tier 1208 of the System architecture,
2 communications by each component with the Component Tier 1208 represented by elements
3 1205, 1206 and 1207 respectively. According to the embodiment depicted in FIG. 4, the
4 Server Components of the Component Tier 1208 use C++ programming language and COM
5 Objects.

6 The Application Tier 1212 of the System Architecture is comprised of a Web Shipper
7 Client component 1213 (which uses HTML (HyperText Markup Language), ASP and
8 JavaScript), the NOC Administration component 1214 (which uses HTML, ASP, VB, and
9 C++), and the Web Shipping Station component 1215 (which uses HTML, ASP, JavaScript,
10 C++, and ActiveX Controls). Each of the Web Shipper Client component 1213, the NOC
11 Administration component 1214, and the Web Shipping Station component 1215 communicate
12 with the Server Components of the Component Tier 1208 as represented by the communication
13 elements 1209, 1210 and 1211 respectively.

14 In one embodiment, the System is implemented in an NT environment. The description
15 of the System as being implemented in an NT environment is exemplary and is not a limitation
16 of the invention.

17 Continuing with FIG. 3, when an Enterprise User uses the System 1 to ship a package,
18 one or more of the System's Servers, e.g., 21a-21n create a new System tracking number.
19 When a new System tracking number is created, one of the System's Database Servers, e.g.,
20 20a-20n, adds a new package record with the newly created System tracking number to a
21 Package Table 28 that resides in the System database 22 and contains package records for
22 System processed packages. An exemplary embodiment of the Package Table contains the
23 following information: 1) Package Tracking State ID; 2) Package Shipping State ID; 3) Actual
24 Delivery Time; 4) Delivered To information; 5) Shipping Date; 6) Carrier Tracking Number;
25 7) System Tracking Number; 8) Carrier ID; 9) Actual Package Weight; 10) Service
26 Description; and 11) Package OID. The content of these fields are described further below.

27 In the exemplary embodiment of the invention, tracking is performed whenever
28 possible using carrier-specific Tracking API's (Application Program Interface). For a
29 Tracking API, a Carrier predefines a layout for tracking requests and predefines a layout for
30 tracking request responses. The System 1 then provides tracking request data according to the

1 layout predefined by the particular carrier. When the System 1 receives tracking request
2 response data from the particular Carrier, the System 1 parses the response data according to
3 the tracking request response layout predefined by the particular Carrier. In order to
4 communicate with each Carrier's system, the System 1 uses the particular Carrier's Internet
5 URL for the particular Carrier's web server system with which to make an HTTP connection
6 to the Carrier's web server, e.g., 23-2, Depending upon the Carrier, the System's 1 tracking
7 request and response interface with the Carrier's web server may be formatted and
8 programmed using HyperText Markup Language ("HTML"), Extensible Markup Language
9 ("XML"), both HTML and XML, or any requirement specified by a Carrier.

10 In the exemplary embodiment of the invention, in cases in which a particular Carrier
11 does not support an API, the System performs tracking using an alternative approach
12 sometimes referred to as "web scraping". In order to track using the web scraping approach,
13 the System 1 communicates with a Carrier by formatting HTML queries to the Carrier's
14 Internet Website. The System 1 is programmed to receive and parse HTML responses from
15 that Carrier's Website. The web scraping process simulates the presence and interactivity of
16 a user at the particular Carrier's Website.

17 It will be understood by someone with ordinary skill in the art that the invention can be
18 installed on an Intranet for an individual enterprise without departing from the spirit of the
19 invention.

20 21 A. ENTERPRISE ADMINISTRATION

22 As described in more detail below, the System provides for the hierarchical definition
23 of users. The System provides for the establishment of at least one user for each Enterprise as
24 a Super-Administrator with the highest level of privileges and authority for the Enterprise.
25 The Super-Administrator can identify other users as Sub-Administrators. With this
26 understanding in mind, general reference is sometimes made below to Super-Administrators
27 and Sub-Administrators collectively as "administrators".

28 As described in more detail below, the System also provides for the hierarchical
29 definition of organizational units within the Enterprise. For example, the System provides for
30 the definition of sites, groups within a site, and users within a group. The System provides

each Enterprise with the flexibility to determine the manner in which the Enterprise defines such organizational units, and the manner in which the Enterprise defines shipping policies and privileges for users in its organization. For example, a large company with many offices may decide to define each address as a distinct site. Another large company with thousands of people in a particular location may decide to define different departments as distinct sites.

As further described in more detail below, the System also provides for a distinct definition of policies, privileges, and other types of specifications for each user level, each user, and each organizational unit.

FIG. 5 is a high level System interactivity data and logic flow diagram depicting an exemplary embodiment of the process by which the System establishes shipping policies set by an Administrator and then enables features for Desktop Users according to the pre-established shipping policies. As depicted in FIG. 5, the System provides Enterprise Administrative features (sometimes referred to herein as the “Administrative Client”) with which Shipping Management, among other things, defines an enterprise’s policies, authorizes certain user privileges at various levels, and identifies reporting requirements.

As depicted in FIG. 5, Administrative user interface features are accessible through the Administrator’s computer 53 client machine 50. The Administrator selects the Account’s Desktop Client Privileges within the Administrative Client tool 54. The Administrative application, running on the System servers 51 checks the System databases 52 to determine whether the Account Desktop Client Privileges have been previously set 55. If no set preferences are found 56, the Administrative client notifies the System servers to display the Desktop client privileges web page 57. The Administrator sets (“toggles”) Desktop privileges by indicating whether each privilege is On or Off and clicks an “OK” button when complete 58. The System saves the privilege settings 60 and notifies the Administrator that the privilege settings have been saved 59.

As depicted in FIG. 5, a Desktop User 61 for which privileges have been set, subsequently attempts to log in to the System 62. The System initializes the Log In web page 63. The Desktop User enters a User Name and Password and clicks the Log in button 64. The System checks the System databases 52 for the User’s Account and Desktop Client Privileges 65. If the User’s Account and Desktop Client Privileges are found 66, the System

1 displays the System Home Page and initializes the features available for the Desktop User as
2 previously enabled or disabled by the Administrator 67.

3 Each Enterprise has a Super-Administrator who is given the highest level of privileges
4 and authority to define sites, groups, and other administrators (Sub-Administrators). Sub-
5 Administrators can perform the same functions as Super-Administrators for the hierarchical
6 level (e.g., site, or group) for which the Sub-Administrator is defined unless the Super-
7 Administrator, or some higher-level Sub-Administrator has restricted their level to do so.

8 The System enables an administrator to define a plurality of shipping locations, also
9 referred to as sites. Each site is a distinct shipping location that may have individual carrier
10 accounts and customized rates, as well as distinct users, associated with it. As part of the site
11 definition, the administrator may specify such things as: origin address information; available
12 Carriers available for all users of that site, including carrier account and rate information;
13 available drop-off locations, including corporate drop-off locations, if any, and/or carrier drop-
14 boxes, offices, call-for-carrier-pick-up, MBE locations, etc.; instructions to be provided on the
15 bottom half of the shipping/traveler label; and the traveler label format to be used.

16 The System is scalable from an administrative standpoint in that it provides for the
17 definition of any number of sites, groups and users. In one embodiment of the invention, site
18 creation privileges are limited to the Super-Administrator; site editing and maintenance tasks
19 can be performed by other administrators.

20 The site definition for the site with which each particular User is associated, and the
21 particular User's privileges as established by the User's administrator, drive the options
22 displayed on the Desktop shipping screens for the particular User.

23 For each site, the administrator can define different pick-up and drop-off options
24 available for getting shipments to the carrier, including the cutoff time for each option. For
25 each site, the administrator can define distinct methods by which a package may be provided to
26 each Carrier, including: corporate drop-off locations (such as a mailroom, a receptionist's
27 desk, etc.); call for Carrier pick-up; Carrier drop-box; staffed Carrier service center; or retail
28 shipping locations such as Mail Boxes Etc.

29 For each Carrier delivery method, the System provides the administrator with the
30 ability to define an associated cutoff time, the relevant Carrier or Carriers, and descriptive

1 information about the option, such as, for instance, text providing the location, such as address
2 information, or phone numbers in the case of call for pick-up. The drop-off location that a
3 particular User chooses drives the instructional text provided on the shipping or traveler label
4 that the particular User chooses to print.

5 As will be described in more detail below, a “traveler” label is not an actual shipping
6 label. Rather, a traveler label is a pre-processing label that the User chooses to print and then
7 provides with the package to an Enterprise Shipper; the receiving Enterprise Shipper uses the
8 traveler label to complete the processing necessary to print a shipping label.

9 For each site, the administrator can create a plurality of groups; each group can be
10 defined to contain a distinct list of individual Users. FIG. 6 is a graphic representation
11 depicting an illustrative example of an Administrator 70 establishing multiple groups 71-74.
12 Each of the groups 71-74 is accessible by certain Users 75-78. For example, as depicted in
13 FIG. 6, the first group 71 is accessible by the first User 75, the second User 76, and the fourth
14 User 78. For the first group 71, the Administrator has enabled Carrier Accounts for the first
15 and fifth Carriers 80-2, certain specified privileges 80-3, and access to only the Desktop Client
16 80-4 (possible clients include Administrator, Desktop, and Shipping Station).

17 The System provides the administrator with the capability to add, edit and delete
18 groups, to specify a group’s site, identify (add or delete) the Users contained within each site,
19 and maintain (add, change or delete) User privileges and User defaults assigned to each group.
20 The System provides the administrator with the capability to extract a list of all User e-mail
21 addresses for the Users within a particular group.

22 Within each group, the administrator can manage User accounts, including creating and
23 deleting User accounts, User security information, and User preference information. The
24 System provides the administrator with the ability to move Users between groups, and to
25 maintain User security information and User information such as return addresses, e-mail
26 addresses, and User preferences. The System provides the administrator with the ability to
27 maintain User security information through such options as resetting a User’s password,
28 requiring that a User’s or a group of User’s passwords be changed on next use, and
29 suspending or reactivating a User’s account or password. In one embodiment of the
30 invention, the System will provide the administrator with the capability to define password

aging intervals, password length, password content rules, and other types of User security settings.

The System further provides the administrator with the ability to bulk load users into a group. When bulk loading users, the System provides the administrator with the capability to upload a file containing User IDs. The administrator can commit an uploaded file of User IDs to a particular group with a common password; the System will then require each User in the group to change the common password to an individual password upon first use.

For each group, the administrator can assign different User privileges. Administrator-established privileges for each particular User controls the functionality available to the particular User. On a Group basis, the System provides the administrator the ability to assign User privileges such as:

- 1) Availability of defined Carriers (including carrier accounts), Carrier services, and Carrier service options in the Ship It and Price It functions of the Shipping System;
- 2) Availability of Price It and Ship It functional areas;
- 3) Availability of defined drop-off locations;
- 4) Ability to print shipping labels vs. traveler labels, by Carrier or by service;
- 5) Availability of different payment methods;
- 6) The rate set(s) to use;
- 7) Ability to use the Desktop function, the Shipping Station function, or both (in one embodiment, the Shipping Station function is shipping-label-print-capable and the Desktop function is not);
- 8) Ability to run End of Day processing.

For each group, the administrator can delegate administrative tasks and can assign different administrative privileges to control the administrative tasks performed by group administrators. In one embodiment of the invention, assignable administrative privileges include the ability to: create/delete corporate sites; edit corporate site information; create/delete/edit carrier accounts; create/delete groups; edit group information, including assigning user privileges to groups; create/delete/edit user information; create users with administrative privileges; create/delete/edit shared address books; and define and run reports.

1 Administrators can only create administrators and assign administrative privileges with
2 privileges equal to or less than their own.

3 The End-of-Day processing privilege is picked up by the Desktop function to enable
4 display of an End-of-Day processing link. Other administrative privileges picked up by the
5 Desktop function enable the display of the appropriate Administrative link.

6 An administrator can specify default user preference information and specify whether or
7 not the preference is editable by a User. An administrator can also edit individual User
8 preferences. The System warns the administrator if editing a default preference for an existing
9 group of Users would overwrite or override existing User preference settings. The Desk Top
10 Shipping application uses the User preference settings established by the administrator.

11 The Super-Administrator can alter certain system settings that are to be applied on a
12 company-wide basis.

13 Administrators with the proper privileges can modify settings that apply on a customer-
14 wide, enterprise-wide basis, including: return e-mail address and “from” e-mail address for
15 system generated e-mails; message text to use for different system generated e-mails, such as
16 notifications, system welcome e-mails, and the like; header and footer HTML information;
17 enable and disable “sticky” logins for the Desk Top Shipping application; allowable number of
18 unsuccessful login attempts; configurable inactivity time before logout; enable and disable
19 password recovery methods available through the Desk Top Shipping application, such as
20 through the login page; logoff URL to which the System is directed at logoff; and toggle on/off
21 address validation.

22 Administrators with the proper privileges can define status messages that will appear on
23 the home page for the Desk Top Shipping Application User. There are several levels of
24 messages, including: 1.) Desk Top wide status messages that are to be shown to one or more
25 Desk Top customers; 2.) Customer-wide messages – defined by an administrator for a
26 particular enterprise for circulation to all Users for that enterprise; 3.) Site-specific messages –
27 defined by an administrator for a particular enterprise for circulation to all Users for a
28 particular Site; and 4.) Client specific messages, e.g., to be circulated to all Desk Top Users
29 for a particular enterprise, to all administrators for a particular enterprise, or to all Shipping

1 Station Users (in an embodiment in which a Shipping Station application is provided
2 separately from the Desk Top application).

3 The System provides the administrator with the capability to set a status message
4 expiration date or validity period so that the administrator does not have to remember to “turn
5 off” a message. The System supports multiple messages at any one time. The System uses the
6 available screen size to determine the limit for messages based on the size of each message and
7 the number of messages. The System supports prioritization of messages so that messages
8 with the highest priority are displayed most prominently, e.g., at the top of the messages
9 displayed.

10 The System provides administrators with limited maintenance capability for shipments
11 entered by Users. For example, administrators can, among other things: 1.) view or void
12 shipments with traveler labels printed but with no shipping label printed; and 2.) perform End
13 of Day processing. Users with the proper privileges can run end-of-day processing through
14 either the Administrator application or through the Desk Top Application.

15 Administrators with the proper privileges can create and manage (edit, delete, update
16 individual address book entries) shared address books for use by Users. Administrators can
17 create shared address books at enterprise, site and group levels and can import address data
18 into the shared address books to load the addresses. Administrators with the proper privileges
19 can upload a file containing addresses into the System and import the addresses into specific
20 address books for which the administrator is authorized to create. In one embodiment, the
21 import file is a text file formatted according to specific System requirements.

22 The System further provides a “live” interface with pre-existing address book systems
23 so that maintenance to the pre-existing address book system(s) is automatically reflected in the
24 System address books. In one embodiment, this “live” address book interface is limited to the
25 enterprise level. In one embodiment, the “live” address book interface uses hierarchical levels
26 in the pre-existing address book system(s) with which to update appropriate System address
27 book levels. Individual Users can establish personal User address books. However, individual
28 Users can only update enterprise, site, group or other shared address books if the User has
29 User address book maintenance privileges and then only for address books “owned” by
30 entities (enterprise, site, or group) for which the User has such privileges.

1 In order for Users to be able to ship with different Carriers, the administrator sets up
2 each Carrier with which the enterprise will ship with account numbers, rates, etc.
3 Administrators with the proper privileges can enable or disable particular Carriers for each
4 site.

5 The System provides the administrator with the capability, for each site, to: 1.) select
6 for use by a particular site Carriers from a plurality of all Carriers supported by the System;
7 2.) assign a Carrier account number for each Carrier for that site; 3.) assign the enterprise's
8 custom rates to each Carrier; and 4.) subject to Carrier limitations and approval, commission
9 each site, as appropriate, for electronic label printing. Administrators can define more than
10 one Carrier for each site, and can assign more than one account for each Carrier for each site.
11 Carrier account numbers must be set up with the Carriers as well as in the System. In one
12 embodiment, the System provides electronic commissioning of Carrier accounts.

13 Administrators can maintain rate information, including custom rates from Carriers for
14 the Enterprise, Site or Group, as appropriate. In one embodiment, custom rates are set by the
15 System's administrator for each enterprise supported by the System. In an alternative
16 embodiment, administrators with the proper privileges define the enterprise's custom rates to
17 the System.

18 In an embodiment that supports administrator rate maintenance, administrators with the
19 proper privileges can maintain the enterprise's rate information for each Carrier selected for
20 use by that enterprise. The System provides the administrator with the capability to: 1.)
21 upload the enterprise's rate information for import into the System; 2.) define any percentage
22 markups and/or fixed handling charges to be added to the enterprise's custom rates for the
23 Price It feature (described further below) of the Desk Top Shipping application; 3.) define any
24 percentage markups and/or fixed handling charges to be added to enterprise's custom rates for
25 the Ship It feature (described further below) of the Desk Top Shipping application; 4.) specify
26 whether the System transactions fees should be added to the enterprise's custom rates for the
27 Price It and/or the Ship It features of the Desk Top Shipping Application and specify the fees
28 to be added; and 5.) create rate sets. When generated by the Desk Top Shipping Application
29 (or the Shipping Station Application) of the System, the Graphic Array Comparison (described
30 further below) will display prices that include any such appropriate percentage markups,

1 handling charges, and/or transaction fees as established through the Administrator feature of
2 the System. Accordingly, each enterprise can charge such items back to the appropriate cost
3 centers in addition to charging the cost centers with the Carrier shipping charges.

4 The System provides administrators with the capability to obtain management summary
5 reports according to various parameters, including among other things, for different dates,
6 enterprise levels and types of shipping activity taking place within the enterprise's account.
7 Management reports are available at the enterprise level, site level, group level, or User level.
8 Such reporting is subject to privilege and accessibility levels. The administrator specifies the
9 desired reporting parameters and select the report or reports from available types of reports.

10 In one embodiment of the invention, given a particular date range and reporting level,
11 the System provides the administrator with the capability to select from a variety of types of
12 reports, including, for example: 1.) piecharts for each Carrier showing service usage; 2.)
13 histogram showing weight distribution; 3.) histogram showing destination distributions by
14 state; 4.) table showing package totals and shipping charge totals by carrier, average weight,
15 charge, and cost per pound, all broken down by sub-level.

16 The System further provides administrators with the capability to obtain detailed
17 activity reports for different dates, levels and types of shipping activity taking place within the
18 company's account. Activity Reports provide detailed listings of shipping activities and
19 charges for use by groups, and cost centers to verify shipping activities and for use by
20 management to charge back shipping activities.

21 Activity Reports are available at enterprise level, site level, group level and/or User
22 level. Administrators can specify the date range and reporting level and can specify reporting
23 breaks based on a variety of factors, including, for example: site, Carrier, group, Shipper's
24 Reference Number, or User. For each break, itemized shipments are reported with a variety
25 of fields, including, for example: date, sender (by User ID), rate destination (may be detailed,
26 or summary), reference number(s), weight, Carrier, and Carrier/Service. Each break reports
27 the total of shipments and shipping charges; the next break item begins a new page.

28 The System further provides the administrator with the ability to request activity reports
29 in the form of data. In one embodiment, report data is provided in the form of a delimited text
30 file for import and analysis into an analysis and reporting tool such as, for example Microsoft®

Excel®. Reports for a given level, whether Activity or Management, are only accessible to Users or Administrators with reporting privileges at that level or higher.

B. ENTERPRISE DESKTOP SHIPPING

In addition to the Administrative Client, the System also provides Enterprise Desktop features (sometimes referred to herein alternatively as the “Desktop Client”, the “EED” (which stands for “Enterprise Edition Desktop”), or the “Enterprise Desktop Client”) which facilitate desktop rating, shipping, and tracking by shipping origination and intermediary users and by Enterprise Shippers, in accordance with enterprise policies and procedures.

Attached hereto is Appendix A, which is incorporated here as if fully stated here and is a part hereof for all purposes. Appendix A hereto is a functional specification for one exemplary embodiment of the Enterprise Desktop Client. Appendix A contains exemplary screen renderings, field descriptions, field edits, and data relationship descriptions for many of the functions described below.

In one embodiment of the invention, a Shipping Station Client is provided by the System which is distinct from the Enterprise Desktop Client. In such an embodiment, the Shipping Station Client is used to finalize shipping documents for which data is originated in the Enterprise Desktop Client.

1. First-time User Setup.

Enterprise Desktop Client Users (“Desktop Users”, or simply “Users”) are directed by the System through a special registration setup path when the User logs on to the System for the first time. The System is sometimes referred to herein as iShip, or the iShip system. The registration setup path enables Users to specify personal default parameters, including, for example, the User’s:

- e-mail address
- return address and phone number
- preferred drop-off location for their site
- preferred carrier

1 Other preferences maintained by the system (as will be discussed in the User
2 Preferences Section 2 below).

3 Not all of the personal default parameters (return address, for example) will be editable
4 depending upon settings established by the Administrator. The Administrator can control via
5 the Administrator client which User defaults are editable by non-administrator User's.

6 If so configured by the Administrator, the registration setup path will require the first-
7 time User to change the first-time password established on their behalf by the Administrator.

8 The user interface for User registration is customizable with the particular Enterprise's
9 intranet style. The System provides the Administrator with the capability to customize the look
10 and feel of the User registration interface by customizing the headers, footers, and color
11 scheme used in the interface screens. The User registration interface identifies each User in the
12 System databases as registered to a specific enterprise account. FIG. 7 is a graphic
13 representation depicting an exemplary Log On System Screen in an exemplary embodiment of
14 the invention.

15 Enterprise Desktop Client user registration is available to users accessing the System
16 from the Internet and through most common corporate firewalls. In one embodiment, the
17 System web site is optimized for Netscape Navigator 4.04 or higher, and Internet Explorer 4.0
18 or higher.

19 The Administrative Client, as described above, provides the Administrator with the
20 capability to bulk load users for a given site, assigning them each a default password, and
21 requiring the password to be changed after first use. The Administrative Client also provides
22 the Administrator with the capability to specify status message to appear on the Enterprise
23 Desktop Client main page ("My iShip"), and to obtain e-mail addresses for their corporate
24 users.

25 26 2. User Preferences

27 The System provides each individual Desktop User with the capability to set
28 preferences for how they prefer to do their shipping. Preference defaults may be set by the
29 Administrator. The Administrator may specify some defaults as non-editable. Generally,
30 Users may set preferences for various parameters, including, for example:

- 1 - Return address, phone number, e-mail address
- 2 - Password
- 3 - Shipper's Reference 1 (such as a particular chargeback code)
- 4 - Preferred carrier
- 5 - E-mail notification (on or off)

6
7 The System provides a separate area of the user interface for setting and altering user
8 preferences.

9 User preferences are only accessible by the User that owns them (the "owner User")
10 and by the governing Administrator (the Administrator with the authorization to maintain that
11 User's preferences). Certain preferences may be defined by the Administrator as not editable
12 by the user. FIG. 16 is a graphic representation of an exemplary Preferences Summary Screen
13 in an exemplary embodiment of the invention. From the Preferences Summary Screen, the
14 User can select an Account Info Link 110, a Change Password Link 111, a Carrier Info Link
15 112, a Drop Off/Pickup Link 113, and an Applications Link 114.

16 If the User selects the Account Info link 110, the System displays an Account
17 Information Preferences Screen in which the User can accept as defaults the Account
18 Information Preference settings established by the Administrator and/or can, to the extent
19 authorized by the Administrator, edit the Account Information Preference settings. FIG. 17 is
20 a graphic representation of an exemplary Account Information Preferences Screen in an
21 exemplary embodiment of the invention.

22 From the Account Information Preferences Screen as depicted in FIG. 17, the User can
23 select a Change Password Link 111, a Carrier Info Link 112, a Drop Off/Pickup Link 113, an
24 Applications Link 114, a Package Options Link 122, a Shipment Options Link 123 or a
25 Payment Link 126. If the User selects the Carrier Info Link 112, the System displays a
26 Carrier Info Preferences Screen. FIG. 18 is a graphic representation of an exemplary Carrier
27 Preferences Screen in an exemplary embodiment of the invention.

28 The Carrier Info Preferences Screen displays the default Carrier Preference settings
29 established by the Administrator, and to the extent authorized by the Administrator, allows the
30 User to edit the Carrier Preferences. The Carrier Info Preferences Screen depicts each

Carrier, e.g., 128 (UPS), that has been authorized for use by the Administrator. A pull down menu button, e.g. 129 for UPS 128, if clicked, displays the Services for that Carrier that are authorized by the Administrator. To the extent authorized by the Administrator, the User can check Carriers, e.g., 130, and Services, e.g., 131a, that the User wants to use. The User can indicate Carrier preferences by clicking a preference button, e.g., 132 for FedEx. The Carrier Info Preferences Screen also provides the capability, to the extent authorized by the Administrator, for the User to request that the Rate Grid (also referred to herein as the Graphic Array) highlight an optimal choice, such as the Fastest Delivery 135, or the Cheapest Delivery 136.

If the User selects the Drop Off/Pickup Link 113 from, e.g., the Carrier Info Preferences Screen, the System displays a Drop Off/Pickup Preferences Screen. FIG. 19 is a graphic representation of an exemplary Drop Off/Pickup Preferences Screen in an exemplary embodiment of the invention.

As depicted in FIG. 19, the Drop Off/Pickup Preferences Screen displays the default Drop Off and Pickup locations set by the Administrator. To the extent authorized by the Administrator, the User can edit the Drop Off and Pickup locations. Each Carrier, e.g., 150 USPS, authorized for use by the Administrator, is displayed on the Drop Off/Pickup Preferences Screen. For each Carrier, the set location, e.g., 151 for USPS, is displayed. The User can display a list of alternative locations by clicking a pull down menu button, e.g., 152 for USPS. Only those locations authorized by the Administrator will be displayed.

If the User clicks the Package Options Link 122, the System displays a Package Options Preference Screen. FIG. 20 is a graphic representation of an exemplary Package Options Preferences Screen in an exemplary embodiment of the invention. The default Package Options authorized by the Administrator are displayed. To the extent authorized by the Administrator, the User can edit the settings for insurance protection 170, reference number assignment 171, verbal confirmation 172, e-mail notification 173, delivery confirmation 174, proof of delivery 175, adult signature required 176, call tag 177, merchandise description 178, certified mail 179, and return receipt 180. Help information is available for each option, e.g., 181 for Proof of Delivery.

1 If the User selects the Shipment Options Link 123, the System displays a Shipment
2 Options Preference Screen. FIG. 21 is a graphic representation of an exemplary Shipment
3 Options Preferences Screen in an exemplary embodiment of the invention. The default
4 Shipment Options authorized by the Administrator are displayed. To the extent authorized by
5 the Administrator, the User can edit the settings for Destination Address Type (Business 190,
6 or Residence 191); shipment reference number 192; percent of shipping charges for labor or
7 material fees 193, or a fixed amount 194; deliver deadline 195 and the delivery deadline date
8 196; guaranteed delivery 197; deliver without signature 198; set earliest delivery time 199 and
9 the associated delivery time 200; documents only 201; non-dutiable 202; Freight Pickup
10 number of flights of stairs 203, loading dock 204, and appointment required 205; Freight
11 Delivery number of flights of stairs 206, loading dock 207, and appointment required 208.
12 Help text is available, e.g., 209 for delivery deadline 195, for each option.

13 As with other preference options, an Applications Options Screen, and Payment
14 Information Screen, display the settings and information authorized by the Administrator. To
15 the extent authorized by the Administrator, the User can edit the settings and information
16 provided by those screens. FIG. 22 is a graphic representation of an exemplary Applications
17 Preferences Screen in an exemplary embodiment of the invention. The Applications
18 Preferences Screen provides applications customization features such as: show application start
19 pages 220 -- for the Ship It application 221; for the Price It application 222; for the Sell It
20 application 223; and for the Preferences application 224; show advanced package options 225;
21 show log off message 226, and Track It Options 227.

22 FIG. 23 is a graphic representation of an exemplary Payment Information Preferences
23 Screen in an exemplary embodiment of the invention. If authorized by the Administrator, the
24 User can edit payment type 230; credit card number 231; expiration date month 232;
25 expiration date year 233; first name 234; last name 235; e-mail address 236; company name
26 237; street 238; city 239; state 240; zip code 241; and telephone number 242.

27 28 3. Security

29 In order to be able to implement management control over shipping activities, the
30 Enterprise Desktop Client performs various security validations in order to be able to

1 positively identify users to the system, provide access to portions of the system based on
2 authentication, and apply shipping policies and procedures based on the user's privileges as
3 set by the administrator.

4 Users are required to identify themselves to the System before gaining access. In one
5 embodiment, identification consists of requiring the User to identify a username and password.
6 In an alternative embodiment of the invention, the System additionally implements "sticky"
7 identification, where user information is stored in a browser cookie. The Administrator
8 controls whether "sticky" identification is allowed.

9 Positive user identification for a particular Desktop User will cause the System to apply
10 shipping rules set for that particular User, and/or for the site and group that apply to the
11 particular User, via the Administrative Client by the Administrator to be applied to the
12 particular User's session with the Enterprise Desktop Client.

13 The Enterprise Desktop Client is configurable by the Administrator to limit the number
14 of unsuccessful logon attempts to allow only a certain number (e.g., 3 times) of unsuccessful
15 logon attempts before freezing an account (i.e. requiring the password to be reset).

16 Shipping transaction information and user credentials sent between end users and the
17 System are encrypted.

18 To accomplish a secure login according to the security features of the System, Users
19 are directed to a logon page to provide authentication when trying to initially access a protected
20 area without identification. The logon page is brandable by the Administrator with the
21 particular Enterprise's look and feel.

22 The System provides password recovery link options which are configurable by the
23 Administrator. In the event that a User forgets the User's password, the System provides,
24 according to the configuration allowed by the Administrator, password recovery links available
25 from the logon page : one option provides the user a password reminder question, the other
26 option generates an e-mail which sends the password to the user's e-mail address on file. The
27 Administrator can allow both options, or can block one or both options. FIGS. 8 through 11
28 are graphic representations of exemplary Password Recovery Screens in an exemplary
29 embodiment of the invention. FIG. 12 is a graphic representation of an exemplary home page

1 for an exemplary embodiment of the invention once an Enterprise User has successfully
2 Logged On.

3 Administrators are not able to view the password of individual users, but are able to
4 reset a user's password (providing a new password via e-mail or over the phone) or generate
5 an e-mail containing the user's existing password.

6 In one embodiment of the Enterprise Desktop Client, the System requires password
7 aging. That is, passwords can be valid for a certain time duration. The System provides the
8 Administrator with the ability to create and enforce password rules regarding such
9 characteristics as the allowable age duration for each password, content, no-reuse policy, and
10 the like.

11 Enterprise System support personnel are able to use the Administrator client to either:
12 reset a user's password or generate an e-mail to the user containing their password. An
13 Administrator can configure the password recovery methods displayed on the logon page, to
14 show either the password reminder question, the request e-mail with password option, or a
15 "Contact Support" message. The Administrator can also specify whether unlimited or limited
16 unsuccessful login attempts are allowed.

17 4. On-line Help.

18 The Enterprise Desktop Client provides both high-level and (to the extent granularity is
19 available for each particular circumstance), context sensitive help for Enterprise Desktop
20 Client Users. The on-line help section is customizable for individual enterprises, so that the on-
21 line help system for the Enterprise Desktop Client application can also be used as on-line help
22 to explain corporate shipping policies as set by the Administrator.

23 The System provides the Enterprise Desktop Client with an interface area devoted to
24 on-line help for the application as a whole. For major areas of the Enterprise Desktop Client
25 (shipping, tracking, preferences), a link to high-level summary help information for that area is
26 provided. For individual sections on each page, context-sensitive help is provided for most
27 sections.

28 In one embodiment, linking to carrier specific or carrier-hosted information is
29 supported by the System.
30

1 Help information setup is accessible by any user that has access to the associated
2 screens.

3 4 5. Modifiable Screens.

5 The System provides the capability to customize the appearance of screens in the
6 Enterprise Desktop Client, on a global-basis. Screen appearance on a user-specific basis is
7 controlled by user privileges.

8 The user interface for Screen customization provides customization for a variety of
9 parameters, including, for example:

- 10 - Field descriptions may be modified (i.e. a field description of
11 “Shipper’s Reference Field 1” can be modified to read “Department ID” or
12 “chargeback code”, or other user-specified description.)
- 13 - Descriptive text appearing on the page can be setup for each input field
14 (i.e. “Company X recommends insurance only for items worth over \$1,000.”)
- 15 - Additional required fields may be specified.
- 16 - Service options may be removed.

17 In one embodiment, the System limits such screen appearance change authority to be limited to
18 be performed by the System’s System Administrator.

19 Modifiable screens are one of the key methods by which an enterprise implements and
20 explains its shipping policies to end Users.

21 22 6. Shipping Destination

23 The Enterprise Desktop Client provides “destination address services” that enable
24 Users to quickly and correctly specify the address for a shipment recipient, such as, for
25 example:

- 26 - Address validation and correction – street-level validation and correction
27 is desired, but not required. City/ST/ZIP validation and correction is required.
- 28 - Types of Address Books and Address features include:
 - 29 - Personal address book
 - 30 - Shared company address book

- Distribution lists
- Add/edit/delete/clone entry
- Import/export addresses to/from text files
- Prompt to save new addresses to address book
- Prompt to save changes to existing addresses (or save new)

Generally, address entries should contain

- Contact name
- Company name
- Address Line 1
- Address Line 2
- City, State/Province, Country
- Phone number
- E-mail address
- Carrier account number(s)

The System provides links to shipping history for a specified addressee for viewing shipments sent to the specified person or entity)

FIG. 13 is a graphic representation of an exemplary Address Book List View Screen in an exemplary embodiment of the invention. As depicted in FIG. 13, the Address Book List View Screen provides a summary list of addresses in the User's Address Book. In one embodiment of the invention, a View History button is provided for each Address Book entry in both the Address Book List View and the Address Book Edit View Screens. If the User clicks the View History button, the System will display all packages shipped to and/or from (depending on the User's preference settings) the recipient with whom the View History button clicked is associated.

FIG. 14 is a graphic representation of an exemplary Address Book Edit View Screen in an exemplary embodiment of the invention. As depicted in FIG. 14, the System provides a User in an Address Book Edit View Screen with a detailed view of address information for a particular entry in the Address Book List View Screen if the User checks a detailed box, e.g., 100 in FIG. 13.

For address corrections, the User interface warns the User that the address has been “fixed” or does not exist, and asks how to proceed. The User can proceed with an invalid address, subject to certain constraints (i.e. invalid street address OK, invalid ZIP code, not OK.) The user interface warns the User that delivery to POBs is limited to the USPS, if a POB is specified as the address.

Users can add/modify/delete entries in their Personal address book, but not in shared address books. Only Administrators can modify shared address books.

Subject to Administrator settings, Desktop Users can set their return address in user preferences and can override the preset return address when desired. Administrators can assign Users to an Enterprise site, which can be separate (but often similar) from the User's individual return address. The Enterprise site (origin) will drive user interface aspects and options available to a User such as drop-off locations displayed, allowable carriers, the account number used, the cut-off times, etc.

- The return address is auto-filled by the System with the address specified in the user's preferences. The return address may be overridden by the User.
- The Administrator can define drop-off locations (including carrier service centers, drop boxes, and MBE centers), with associated cut-off times, for each site.

1 - Available drop-off locations are displayed according to user privileges
2 and the user's Enterprise site.

3 - The User interface provides time- and site-sensitive alerts on cut-off
4 times and drop-off locations based on Administrative settings. The
5 Administrator client provides the capability to the Administrator to define
6 Enterprise sites and drop-off locations (including off-site locations) available per
7 site, as well as cut-off times for Enterprise sites and drop-off locations.

8 End of day reports account for packages dropped-off at an off-site location.

9 10 8. Shipment Rating.

11 The System prompts Users to supply information necessary to price shipment of a
12 package. FIG. 24 is a graphic representation of an exemplary Price It Start Page in an
13 exemplary embodiment of the invention. As depicted in FIG. 24, a User's default preference
14 settings are displayed. To change information, the User clicks on the Change button, e.g.,
15 250, associated with the section of information, e.g., Shipment Information 251, that the User
16 wants to change.

17 Clicking one of the Change buttons, e.g., 250, causes the System to display a detailed
18 Price It Shipping Estimate Screen with which the System prompts the User to supply the
19 changed information. FIG. 25 is a graphic representation of an exemplary Price It Shipping
20 Estimate Screen in an exemplary embodiment of the invention. To the extent authorized to do
21 so by the Administrator, the User edits the Shipping Estimate data fields: Origin zip code 149;
22 drop off location (by clicking the drop off location link 281); destination address fields
23 (nickname 261; country 262; city 263; state 264, and zip code 266) can be populated by
24 clicking the Address Book link 260, locating the appropriate Address Book entry, and clicking
25 on that entry; business 190 or residence 191; number of packages 270; all packages in
26 shipment same 271 or not 272; package weight in pounds 273 and ounces 274; packing type
27 275; or the package dimensions in length 276, width 277 and height 278; whether the
28 packaging is irregular or non-standard 279; and advance package options 280. Clicking the
29 Drop-off Location link 281 causes the System to display a Drop Off Locator Screen as depicted
30 in FIG. 26.

1 FIG. 26 is a graphic representation of an exemplary Drop Off Locator Screen in an
2 exemplary embodiment of the invention. The Drop Off Locator Screen provides a Location
3 Type window 282 and a pull down menu button 283 with which the User can specify the
4 Location type. The User is prompted to specify the Carrier 284, using a pull down menu
5 button 285. The User can specify if the report should only show locations where the day's
6 deadline has not yet passed 286. When the User has input the necessary locator information,
7 the User clicks the Go button 287. The System locates all locations matching the User
8 specified criteria and reports them 289. The User can sort the report by deadline time 288 by
9 clicking the deadline time heading 288 on the onscreen report.

10 In one embodiment, the User enters only a recipient's e-mail address in a shipping
11 request. The System uses the recipient's e-mail address, e.g., 293-1 as depicted in FIG. 27,
12 as a database key to retrieve information about the recipient's shipping address and use that
13 information to populate the shipping request delivery address information. FIG. 27 is a
14 graphic representation of an exemplary Shipping Addresses Screen in an exemplary
15 embodiment of the invention. Inputting the Recipient's e-mail address 293-1 causes the
16 System to populate the Destination address information 293 if the information is already in the
17 Address Book.

18 If the Destination address information for the specified Recipient is not already in the
19 Address Book, the User must input the Destination Address information 293 and can indicate
20 to the System to save the new address in the Address book 293-2.

21 The user can specify notification e-mail addresses 294 to which the System generates
22 and sends an e-mail notifying that a package has been sent. The User can enter a message for
23 the e-mail 295, a description of the package 296 and a reference number 298. If no message is
24 specified, the System sends a standard message. The User can click the Browse button 297 to
25 browse a library of item descriptions contained in the System databases.

26 FIG. 28 is a graphic representation of an exemplary Shipping Payment Screen in an
27 exemplary embodiment of the invention that is displayed when a package is to be shipped. The
28 System populates the data fields displayed in the Screen with default information according to
29 the Administrator settings, User preferences, and to the extent as discussed below, Recipient
30 preferences. The User can supply other payment information by completing the appropriate

1 fields. The default payment type 299-1 is set by the System according to any defaults as
2 mentioned above. The System provides a drop-down menu button 299-2 with which the User
3 can select a different payment type. If the User changes the Payment type, the appropriate
4 fields are displayed for User data input 299-3.

5 In one embodiment, the System provides recipients with the capability to set up
6 recipient shipping preferences which are related to the recipient's e-mail address in the System
7 databases. Recipient Preference Screens are similar to those described herein with regard to the
8 User's Preference Screens, and are saved by the System in the System databases so that the
9 Recipient's Preferences are accessible by the Recipient's e-mail address. In such an
10 embodiment, when the User enters the Recipient's e-mail address, the System populates not
11 only the shipping delivery address, but the Recipient's shipping preferences as well.

12 In one such embodiment, the Address Book entry for the Recipient contains the
13 Recipient's e-mail address. The System provides in such an embodiment, a Quick Ship
14 option, such as from the Address Book entry for the recipient. The User clicks the Quick Ship
15 button associated with a particular recipient's entry in the Address Book and the System
16 populates the shipping delivery address and the Recipient's shipping preferences.

17 i.) Shipment Rating for Returns Processing

18 In one exemplary embodiment of the invention, the System of the present invention is
19 integrated with a Returns System such as disclosed in U.S. Patent Application attorney docket
20 number PSTM0042/MRK the disclosure of which is incorporated for all purposes herein by
21 reference as if fully stated here. In such an integrated Returns System/Enterprise System
22 embodiment, a Recipient can arrange for the return to an Enterprise of an item previously
23 shipped by the Enterprise to the Recipient. To do so, as will be described in more detail
24 below, the Recipient of the previously shipped package accesses the Enterprise's Online
25 Internet Web site, views the Enterprise's Recipient Order History for that Recipient, and
26 clicks on a Return button associated with the particular package to be returned.
27

28 In such an integrated Returns System/Enterprise System embodiment, as described in
29 more detail below, the Enterprise User and/or Administrator, sets up Returns Policy rules.
30 The System populates all of the appropriate fields regarding the package to be returned with

1 the information stored in the System databases by the original Enterprise User. The Integrated
2 Returns/Enterprise System allows the Recipient, as further described below, to set up Recipient
3 Shipping Preferences. When a Recipient requests return processing, the Returns/Enterprise
4 System asks the Recipient a series of Returns Questions, and processes the return request in
5 accordance with the Recipient's responses to the Returns Questions and in accordance with
6 the Returns System processing settings as established by the Enterprise's User/Administrator.
7 If the Recipient is paying for the return shipping, the Returns/Enterprise System allows the
8 Recipient to choose the return shipping Carrier and Service from a Graphic Array comparison
9 display of shipping charges for those Carriers authorized for Returns Processing by the
10 Enterprise. Return processing populates the Inbound Tracking Log for the Enterprise User
11 and notifies the User of the return..

12 FIG. 29 is a graphic representation of an exemplary Order History display for a
13 particular Customer in a particular Enterprise's Online Internet-based website. In the
14 exemplary case depicted in FIG. 29, the exemplary Order History display depicts an order
15 history for an exemplary Customer of the Enterprise in the particular Enterprise's Online
16 Internet store.

17 In the exemplary Enterprise's Online Store, as depicted in FIG. 29, the Enterprise
18 displays the Enterprise's Logo 4380. The exemplary Enterprise's Online Store provides a
19 main menu of options 4382, for example, "Welcome", "Online Merchandise", "Catalog
20 Merchandise", "Place Orders", "Return Merchandise", etc. Further, in the exemplary
21 Enterprise's Online Store, each Page provides a Submenu of options 4381 that provide
22 functionality appropriate for the selected main menu option. In the illustrative FIGURES
23 described below, the Consumer has entered the Enterprise's Online Store, and has entered,
24 for example, the Return Merchandise page. With the Return Merchandise page, the
25 Enterprise's Online Store provides appropriate Submenu selections 4381 that allow the
26 Consumer to view the Consumer's Order History and access the Consumer Returns
27 Subsystem to return merchandise.

28 In the exemplary Order History display depicted in FIG. 29, the particular Consumer's
29 Shipped Orders 4400 are listed, e.g., 4401-1 through 4401-7. From the Order History as

1 depicted in FIG. 29, the Consumer can select a particular order number, e.g., 4401-1, by, for
2 example, clicking the cursor on the order number 4401-1.

3 To return an order, or an item from within a particular order, the Consumer selects a
4 particular order number, e.g., 4401-1. Selecting a particular order number, e.g., 4401-1,
5 causes the Enterprise's Online store system to display (4361 in FIG. 30a) an Order Summary
6 as depicted in FIG. 31.

7 FIGS. 30a through 30c are logic flow diagrams depicting an exemplary high level logic flow
8 for a Consumer's experience with an exemplary embodiment of the Returns System of the present
9 invention from within a Merchant's Online store. FIG. 31 is a graphic representation of an
10 exemplary Order Summary Screen for a particular Order Number for a particular Consumer
11 from within a particular Enterprise's Online store in an exemplary embodiment of the
12 invention.

13 The exemplary embodiment of the invention depicted in FIGS. 30a-30c shows that the
14 Enterprise's Online store system accesses the Return System's Tracking Database 4115
15 (which is part of the Return System's databases 22 as depicted, e.g., in FIG. 3) to provide the
16 Consumer's Order History and Order Summary information. In an alternative embodiment,
17 the information necessary to populate the Consumer's Order History and Order Summary
18 information is contained within the Enterprise's store's own databases.

19 As depicted in FIG. 31, a Return System icon, e.g., 4402, is displayed on the Order
20 Summary Screen. To return a particular item or set of times, the Consumer must click on the
21 Return System icon 4402. If the Consumer clicks on the Return System icon 4402, the System
22 generates the display of a Returns Service Screen. FIG. 32 is a graphic representation depicting
23 an exemplary Returns Service Screen provided by the Consumer Returns Subsystem in an
24 exemplary Enterprise's Online store in an exemplary embodiment of the invention.

25 In a Returns Service Screen, such as the exemplary one depicted in FIG. 32, the
26 Enterprise's Standard Policy Overview Statement 4420 (e.g., 4160 as depicted in FIG. 33) is
27 displayed. To display the Enterprise's Standard Policy Overview Statement 4420, the System
28 retrieves the Enterprise's Policy Overview statement 4362 from the Return System Account
29 Database 4106 as depicted in FIGS. 30a-30c. Continuing with FIG. 32, a check box, e.g.,
30 4421-1 through 4421-7, is displayed next to each ordered item, e.g., 4404-1 through 4404-7.

To return a particular item or set of times, the Consumer must select the items to be returned 4363 as depicted in FIGS. 30a-30c. Continuing with FIG. 32, a Consumer that wants to return a particular item, e.g., 4404-7, checks the check box 4421-7 associated with that item (multiple boxes for multiple items can be checked) and then clicks the onscreen "Next Step >>" button 4422.

FIG. 34 is a high level data and logic flow diagram depicting an overview flow of the Returns System flow in an exemplary embodiment of the invention. As depicted in FIG. 34, the Enterprise establishes the Enterprise's returns policy in the Returns Policy Database 800 using the Returns Manager Subsystem 752. The Consumer Returns Subsystem displays the Enterprise's standard returns policy 791 and walks the Consumer through the appropriate return questions, applying the appropriate return rules, including exceptions 794 as that process is depicted in FIG. 35.

Continuing with FIG. 34, the Consumer then uses the System's shipping functionality 802 provided by the Returns Processing Subsystem 815 in the exemplary embodiment of the invention to return ship the merchandise 801. Returns shipping processing assigns the returned package a return tracking number 803. The Return Processing Subsystem provides a Background Tracking Agent 804 that periodically accesses the list of return tracking numbers and in an asynchronous manner uses the System's multi-carrier tracking function 805 to access the System's tracking servers, e.g., 21s-21z (as depicted in FIG. 3) and populates the return tracking databases 771, 773 (details). The System provides Consumer tracking of a return shipment 806 through a Consumer Returns Subsystem access to the Returns Processing Subsystem's Multi-Carrier tracking function 805. The Multi-Carrier Tracking function 805 is described further below.

Returning to FIG. 32, once the Consumer clicks the onscreen "Next Step >>" button 422, then as depicted in FIGS. 30a-30c, the Return System then prompts the Consumer, through the Consumer Returns Subsystem in the Enterprise's Online Store system, to answer the Enterprise's Return Questions and provide the requested Return Reasons 4364.

FIG. 36 is a high level interactivity diagram depicting an exemplary embodiment of the interactivity of the Customer Returns Subsystem between a Consumer's Client Machine, Customer Returns Page, various Customer Returns Subsystem functions, and the Return

1 System servers in an exemplary embodiment of the invention. As depicted in FIG. 36, a
2 portion of the Consumer Returns Subsystem 901 operates on the Consumer's (also referred to
3 here as the Customer) Client Machine 900. When the Consumer accesses the Enterprise's
4 online store, the Enterprise's menu options allow the Consumer to access the Consumer
5 Returns Page 902 from within the Enterprise's online store. From the Consumer Returns
6 Page, the Consumer can access the Consumer Returns functions such as, for example: Display
7 of the Enterprise's Standard Policy and display items available for return 903 from the
8 Standard Policy data 754; prompt the Consumer for the reason for the return 904; prompt the
9 Consumer for shipping information such as the carrier with which the package will be returned
10 and the packaging of the item 905; finalize shipping of package 906; and print a shipping label
11 907 saving the shipping label information, such as the tracking number, in a Return Label
12 database 908. As with the Returns Manager Subsystem, the Consumer Returns Subsystem
13 uses the Return System's web servers 21m-21r to interact with the Consumer, and uses the
14 Return System's Database servers 20a-20n to access the various databases in the Policy
15 Database 800 that are needed to supply the information for the interactivity

16 FIG. 37 is a graphic representation of an exemplary Returns Service Return Reason
17 Screen in an exemplary embodiment of the invention. As depicted in FIG. 37, for the Order
18 selected 4401-1, for the item 4404-7 selected to be returned 4421-7, the Enterprise's Question
19 4206 is asked, prompting the Consumer with acceptable answers 4216, 4207, 4212, and 4220
20 for selection 4427-1 through 4427-4 respectively. A Consumer Comments window 4425 is
21 provided with up and down scroll buttons 4426-1 and 4426-2 in which the Consumer can
22 specify a narrative description.

23 As depicted in FIGS. 30a-30c, the Return System compares the Consumer's Return
24 Reason with the Enterprise's Return Policy 4365. According to the Enterprise's Return
25 Policy, if the Consumer's Return Reason is "justified", then the Return System authorizes the
26 return 4369 (and according to the Enterprise's Return Policy, pays for the Return Shipping),
27 calculating a Refund Amount and allowing the Consumer to Launch a Label 4370, Print a
28 Shipping Label 4371; the Return System thanks the Consumer 4372 and Prepares a Package
29 Return Shipped e-mail 4373.

Returning to FIG. 37, a Refund Amount 4172 is calculated based upon the standard policy choices made by the Enterprise (Refund Amount 4172 = Item Price 4173 + Item Tax 4174, as depicted in FIG. 33). When the Consumer has completed the Return Reasons for the particular item, the Consumer clicks the onscreen “Next Step >>” button 4422.

FIG. 38 is a graphic representation of an exemplary Return Summary Screen in an exemplary embodiment of the invention. The Return Summary Screen depicted in FIG. 38 displays the Enterprise’s Response 4213-1 appropriate for the Consumer’s Return Reason 4427-3 depicted in FIG. 37 in response to the Enterprise’s Return Question 4206 and possible Return Answers 4216, 4207, 4212 and 4220 depicted in FIG. 37. The Return Summary Screen depicted in FIG. 38 displays the item description of the item being returned 4404-7, the Reason for Return 4212, and the Consumer’s comments 4425. The Return Summary Screen also displays the item price 4173 and the calculated Refund Amount 4172.

The Return Summary Screen prompts the Consumer to select one of the Enterprise’s choices of Carriers 4187-1, 4188-1, 4190 and 4184. The Return Summary Screen also prompts the Consumer to indicate whether 4433 or not the 4434 the returned item is in its original packaging 4432. By pressing the onscreen “Next Step >>” button 4422, the Return System displays a Label Create Screen. Label Printing is described further below.

a.) Weighing the Package

Depending on the Administrative settings for Shipping Rules and privileges available to the User, the Desktop User, or in the alternative, a Shipping Station, will need to supply the weight (e.g., 273-274, FIG. 25) of the parcel to be shipped. This can be done by weighing the package and entering the weight in a System data collection screen, or, in one embodiment of the invention, the Shipper’s PC is configured with a scale and the System communicates with the Shipper’s scale using the user’s client web browser. FIGS. 39a through 39c depict an exemplary logic flow for communications between the System and a Shipper’s PC and a scale configured with the Shipper’s PC. In the exemplary embodiment, the Shipper establishes in the System certain information about the Shipper’s PC configuration at the time the Shipper sets up an Account 601. If the Shipper’s PC is configured with a scale, the Shipper specifies scale configuration information 602 such as: the make and model of scale, and the type of port

(e.g., serial or parallel) with which the scale is configured with the PC. Further, the System provides storage and access 603 for the Shipper's scale configuration information in a database 604.

In the exemplary embodiment of the invention, the System supports various makes and models of scales. Each scale make and model has a set of features and requirements for which the System must be programmed in order for the System to communicate properly with each particular scale. The System provides an ActiveX control dedicated to communications with peripheral devices configured with client PCs ("Shipping Station ActiveX Control") 607. Contained within the Shipping Station ActiveX Control is a table (the "scale table") 608 containing entries for each supported scale make and model and provides logic to process the communication information for each scale make and model as appropriate. It should be understood by someone skilled in the art that the Shipping Station ActiveX Control facilitates communications with various devices on the client machine. The Shipping Station ActiveX Control 607 and the scale table 608 are requested 606 by the web page (the "System/scale interface") containing the Weight field 1051 at the time that the Shipper activates 605 the Weight field (e.g., 273-274, FIG. 25). Once the web page requests the Shipping Station ActiveX Control 607, the Shipping Station ActiveX Control 607 is automatically installed on the client 609. In the event that the Shipping Station ActiveX Control is updated to facilitate the support of additional scale makes and models, the Shipping Station ActiveX Control is automatically reinstalled on the particular client PC the next time that the Shipper activates the Shipping Station ActiveX Control.

The Shipper places the Subject Parcel on the scale 610. The Shipper activates the Shipping Station ActiveX Control by placing the cursor of the Shipper's PC on the Weight field (e.g., 273-274, FIG. 25). The System checks the Shipper's scale configuration information to determine 611 whether the Shipper's PC is configured with a scale. If so, the System activates the System/scale interface 613. Otherwise, the user may input the weight 612 in the weight fields 273-274 as depicted in e.g., FIG. 25.

In one embodiment of the System/scale interface aspect of the invention, the System uses ActiveX control language and the client's web browser, such as Internet Explorer browser. Using the Shipper's scale configuration information, the System calls Windows

libraries 615 to open the serial or parallel port with which the scale is configured, as the case may be and as is specified in the Shipper's scale configuration information. Windows is an operating system used with most PCs.

The System uses the information for the particular scale make and model from the scale table 608 of scale makes and models to send a communication query to the particular scale 616. Typically, the communication query information required by a particular scale make and model is a particular set of characters. Each scale make and model recognizes a unique set of characters as a request for a weight. Accordingly, the appropriate set of characters that means a request for weight to a particular scale make and model is stored in the scale table for a particular scale make and model.

After a proper query, a scale will return a data stream containing the weight of the parcel 617. Depending on the scale make and model, other types of information may be contained in the return data stream. The System accesses the scale table 608 to interpret 618 the return data stream according to the scale make and model rules as stored in the scale table and as programmed in the Shipping Station ActiveX Control.

Other scale communication information is contained in the scale table for each scale make and model, including, for example: the character string that communicates a request as to whether or not the weight is stabilized; the default contents of the return data stream of the weight from a particular scale make and model; and the character string to request that the scale send the weight mode with the return data stream. Weight mode is the mode with which the scale measures weight (e.g., pounds, kilograms, etc.).

In one embodiment, as long as the Shipper's cursor remains on the Weight field (e.g., 273-274, FIG. 25), the System polls the scale repeatedly requesting the weight and requesting notification that the weight is stabilized 619. Each time the System polls the scale, the System tests to determine 620 whether or not there is a difference in the weight as compared with the last time that the System polled the scale. If the System determines a difference in weight, then the System uses the Shipping Station ActiveX Control to fire an event 621 to the client web browser to display on the User Interface screen that the weight has changed.

In one embodiment, once the Shipper removes the cursor from the Weight field (e.g., 273-274, FIG. 25), the System stops polling the scale 622. If prior to the last polling to the

1 scale, the scale notifies the System that the weight has stabilized 623, the System will proceed
2 with preparing the Graphic Array if requested to do so by the Shipper 625. Otherwise, if the
3 System determines a difference in weight, the System notifies the Shipper that the weight is not
4 stable 624.

5
6 b.) The Graphic Rate Comparison Array

7 Continuing with FIG. 25, once the User has entered shipping estimate information, the
8 User can preview rates by clicking the Rates and Times link 290. Clicking the Rates and
9 Times link 290 causes the System to display a Graphic Array, also referred to as a Rate Grid,
10 that provides Users with a comparison view of the costs and delivery schedules for the carriers
11 and services available at their Enterprise in an easy to use, Graphic Array summary format.
12 The costs displayed are based on the custom rates entered for their Enterprise. The format
13 enables the User to make an informed business decision on the tradeoff between cost and
14 delivery time subject to shipment policies established by the Administrator.

15 In an exemplary embodiment of the invention, the System uses MTX.exe as a
16 transaction server. MTX.exe is an executable program that is part of the Microsoft suite of
17 Internet web solution products.

18 In the exemplary embodiment of the System, Web pages are grouped in organization units
19 referred to as "virtual directories." For example, in the exemplary embodiment, all of the user
20 interface Web pages that prompt a user to input registration data, and that provide interactive
21 feedback to the registering user, would be grouped into a virtual directory. When a request for a
22 particular Web page is received by a particular shipping Web server, the shipping Web server
23 determines which virtual directory is needed. Depending on the virtual directory to be accessed,
24 MTX.exe loads one of a plurality of COM objects, which are DLL's (Dynamic Link Libraries), for
25 the System. One of the COM objects for the exemplary embodiment of the system is referred to as
26 the Rating.DLL.

27 Each Enterprise user is enabled to process one or more Carriers from a plurality of
28 Carriers supported by the system and authorized for use by an Administrator. In the exemplary
29 embodiment of the invention, when a user, through the user's client PC, issues a rating

request, the System passes a list of carrier identifiers for the carriers enabled for that user to the Rating.DLL operating on the shipping Web server to which the rating request is directed.

The Rating.DLL consists of various rating-related functions, one of which is referred to as "Get_Rate_Function". Get_Rate_Function receives as input the carrier IDs for the carriers enabled for the particular user, package information, shipping information, including origin and destination postal codes, and other information. Get_Rate_Function parses the received input information and tests the carrier ID to determine the name of one of a plurality of Carrier-specific shipment rating routines that is to be performed in order to rate shipments for the particular carrier ID. In the exemplary embodiment of the invention, the Carrier-specific shipment rating routines are SQL Stored Procedures that are executed by the appropriate SQL Database Server. Get_Rate_Function then causes the appropriate Carrier-specific shipment rating routine to be performed to rate the User-specified shipment according to the relevant Carrier's business rules.

FIG. 40 is a graphic representation of an exemplary Preview Rates Screen (also referred to in some embodiments as a Rates and Times Screen) in an exemplary embodiment of the invention. The Graphic Array format is sortable by price (*i.e.*, cheapest first), by delivery time (*i.e.*, fastest is first), or preferred carrier, as governed by the Enterprise and User preferences. The Preview Rates Screen provides the User with the capability, if authorized by the Administrator, to optimize the Rates display according to the Best Price, or the Fastest Delivery.

The exemplary Preview Rates Screen depicted in FIG. 40 depicts an array of dates for delivery, Carriers, e.g., UPS, and Services e.g., for UPS. If Carriers authorized by the Administrator and selected by the User provide Services authorized by the Administrator and selected by the User on more days than space exists on the Rate Grid, left and right scroll buttons (not shown) are provided.

The Services for a Carrier can be displayed by the User by clicking a scroll down button, e.g., for UPS. Each listed Service for the Carrier identifies the time for delivery, e.g., 5306. When the Preview Rates Screen is displayed, the Carrier for which the User has specified a preference (or for which the Administrator has specified a preference) is displayed in an expanded mode, such as is depicted in FIG. 40 for UPS so that all Services supported and

1 authorized are displayed 5300; Carriers for which neither the User nor the Administrator have
2 indicated preference are displayed in contracted mode, such as is the case for Fed Ex 5310,
3 Airborne Express 5311 and USPS 5312.

4 In the embodiment depicted in FIG. 40, only the Carriers and Services authorized by
5 the Administrator, and further reflecting the preferences of the User, are displayed. In one
6 embodiment of the invention, a Show All button (not shown) is provided - clicking the Show
7 All button causes the System to display all Carriers, Services, and Days of Delivery authorized
8 by the Administrator, even if the User has previously limited the available Carriers, Services
9 and Days of Delivery.

10 A price is displayed in an Array cell, e.g., 5307, 5302 for Carrier/Service supports the
11 day of delivery 5303-5305. According to the User's Optimization Selection 5135-5136, an
12 Optimizer icon 5301 is displayed in the Graphic Array cell entry that reflects the optimal
13 Carrier/Service.

14 As is described below, each Carrier is represented in the Graphic Array/Rate Grid by a
15 different color. In the embodiment of the Rate Grid depicted in FIG. 40, the optimally rated
16 shipping entry for each Carrier is highlighted in the color for that Carrier; all other entries for
17 that Carrier are in grey.

18 The presence or absence of Carriers in the Graphic Array display is driven by
19 enterprise administrative policy (Next Day delivery may be prohibited by the Administrator for
20 packages other than letters), and service choices the user has made (for example, by choosing a
21 billing option that only certain carriers support).

22 The rates calculated and displayed in the Graphic Array are customizable. Some
23 Enterprises may wish to see the iShip System transaction charge included in the rate quote.
24 Some Enterprises may also wish to add their own markup to the carrier charges in order to
25 cover the costs of the shipping department in general. Administrators use the Administrative
26 Client to define user privileges that control what carriers and services appear in the rate display
27 for a given shipment. They can also control the presence of the iShip transaction fee and any
28 internal rate markup in rate grid charges.

29 In one embodiment of the invention, a Rating button is provided on the same screen on
30 which the Graphic Array is displayed, with which the User can toggle the rates displayed in

the Graphic Array back and forth between the Enterprise's actual shipping rates (including all discounts) and the rate that the Enterprise charges another person, *e.g.*, the recipient, for shipping. In another embodiment, such as the one depicted in FIG. 41, the User selects the Show Retail Rates Yes 313-1 or No 313-2 button to indicate whether or not the Graphic Array displays Retail Rates or the Enterprise's rates at the time the User defines the Shipping options. FIG. 41 is a graphic representation of an exemplary Shipping Options Screen that is displayed when a package is to be shipped.

Unless prohibited by the Administrator, Users can generally access general rate information outside a shipping transaction, as well as rating applied to a particular shipping transaction.

c.) An Alternative Embodiment of the Graphic Array

An alternative exemplary embodiment of a Graphic Array is depicted in FIG. 42. In the embodiment of the Graphic Array depicted in FIG. 42, the particular screen is titled the Rates and Times Screen.

As depicted in FIG. 42, the exemplary Graphic Array contains the following information and display elements: 1) valid delivery dates 1063 (1063-1 through 1063-3) across the top of the graphic display for the selected Ship Date; 2) sorted, valid delivery times 1064 (1064-1 through 1064-6) for all valid dates down the left side of the graphic display; and 3) color coded by Carrier, Carrier cell entries, *e.g.*, 1065, for each available rate, by date and time.

In the exemplary embodiment depicted in FIG. 42 the Graphic Array comprises an array of intersecting rows and columns. Each column corresponds to a day and date of parcel delivery. In FIG. 42, the days and dates of delivery shown are "TUE 28 SEP 99" (1063-1), "WED 29 SEP 99" (1063-2) and "THU 30 SEP 99" (1063-3). As depicted in FIG. 42, space for other columns (1063-4 through 1063-7) are available for display; in the case of the example depicted in FIG. 42 however, no dates are displayed in those columns.

Each row of the Graphic Array corresponds to a time of delivery. In FIG. 42, the times of delivery are shown as "8:00 AM" (1064-1), "10:30 AM" (1064-2), "12:00 PM" (1064-3), "3:00 PM" (1064-4), "4:30 PM" (1064-5), and "5:00 PM" (1064-6).

At the intersection of each row (1064-1 through 1064-6) and column (1063-1 through 1063-7) of the Graphic Array is a “cell.” In FIG. 42, cells will be referred to by the element 1071, and by the intersecting row (1 through 6) and column (1 through 7) the intersection of which forms the space for each cell (1071-1-1, 1071-1-2, . . . 1071-6-7). Some of the cells depicted in FIG. 42 are empty, e.g., 1071-5-1, 1071-6-1, 1071-6-3, 1071-6-4. Empty cells represent the circumstances that none of the Carriers supported by the System (the “supported Carriers”) support delivery of the Subject Parcel for the time and date for which that cell represents the intersection.

Some cells depicted in FIG. 42 have one or more cell entries. In FIG. 42, each cell entry represents a particular Carrier. Each Carrier cell entry is color coded with a unique color, the unique color corresponding to a particular Carrier as is discussed in more detail below; each Carrier cell entry contains a graphic element, e.g., 1147a, and a monetary amount, e.g., 1147b, which represents the price for which the corresponding Carrier would deliver the subject parcel. For instance, cell 1071-1-1 contains a single Carrier cell entry 1148. Cell 1071-3-1 contains two Carrier cell entries 1065 and 1149.

A color-coding legend 1062 is displayed on the Screen to identify by a name (1140b, 1141b, 1142b, and 1143b) and a color-coding symbol (1140a, 1141a, 1142a, and 1143a), each of the supported Carriers that provide the service according to the particular Shipper’s Parcel Specifications for the particular Subject Parcel.

For purposes of this application, unique colors are depicted with graphic symbols. For example, a right-diagonal hash mark symbol 1140a is used herein to represent the color red; a left-diagonal hash mark symbol 1141a is used herein to represent the color purple; a vertical hash mark symbol 1142a is used to represent the color amber; and a horizontal hash mark symbol 1143a is used to represent the color blue. The particular hash mark symbols used herein and the colors mentioned herein are exemplary and are not a limitation of the invention.

Each cell of the Graphic Array that is not empty contains one or more color-coded Carrier cell entries. For example, in FIG. 42, cell 1071-3-1 contains two Carrier cell entries, 1065 and 1149. Carrier cell entry 1065 is color-coded with the right-diagonal hash mark symbol (representing the color red) which, according to the color-coding legend 1062, corresponds 1140a with the Carrier identified as “Airborne” 1140b. Carrier cell entry 1149 is

1 color coded with the horizontal hash mark symbol (representing the color purple) which,
2 according to the color-coding legend 1062, corresponds 1143a with the Carrier identified as
3 "USPS" 1143b.

4 Each Carrier cell entry, e.g., 1065, contains a graphic element, e.g., 1065a, which
5 contains what is known as "ALT text". As depicted in FIG. 42, a Shipper viewing the
6 Graphic Array online can place the PC's cursor on the graphic element, e.g., 1065a of a
7 particular Carrier cell entry, e.g., 1065, to display a pop-up screen 1069 that displays the ALT
8 text for that particular Carrier cell entry. In some embodiments, the ALT text will be displayed
9 by merely placing the cursor over the graphic element for a particular Carrier cell entry and
10 leaving the cursor in that position for a certain time interval. In alternative embodiments, the
11 Shipper must click on the graphic element for a particular Carrier cell entry in order to display
12 the ALT text. In the exemplary embodiment depicted in FIG. 42, the displayed ALT text,
13 e.g., the text displayed in pop-up screen 1069, contains the full Carrier name (in the depicted
14 case, "Airborne Express") and the full Carrier service name (in the depicted case, "Express
15 Overnight Service") for the Carrier 1140b (in this case, Airborne) to which that Carrier cell
16 entry corresponds.

17 As depicted in FIG. 42, the color for the Carrier identified as "Airborne" 1140b is
18 depicted in the color coding legend 1062 with a right-diagonal cross-hatch symbol 1140a.
19 Accordingly, each Carrier cell entry contained within the Graphic Array with the right-
20 diagonal cross-hatch symbol, e.g., 1065, corresponds to a delivery of the Subject Parcel
21 supported by the Carrier "Airborne." Appearing in each of the color-coded Carrier cell
22 entries, e.g., 1065 is a graphic element, e.g., 1065a, and a monetary value, e.g., 1065b. The
23 monetary value, e.g., 1065b corresponds to the price that the corresponding Carrier would
24 charge to deliver the Subject Parcel according to the time 1064-3 and date 1063-1 specified
25 according to the row and column of which the intersection (which, in the case described is cell
26 1071-3-1) contains the Carrier cell entry 1065. For example, as depicted in FIG. 42, the
27 Carrier cell entry 1065, depicted with the right-diagonal cross-hatch symbol, contains the
28 monetary amount "\$9.00." Accordingly, the amount \$9.00 is the price that the Carrier
29 Airborne would charge to deliver the Subject Parcel at the identified time of 12:00 p.m. 1064-3
30 on the identified date of Tuesday, September 28, 1999 1063-1.

1 Similarly, as depicted in FIG. 42, the color for the Carrier identified as "FedEx"
2 1141b is depicted in the color coding legend 1062 with a left-diagonal cross-hatch symbol
3 1141a. Accordingly, each Carrier cell entry contained within the Graphic Array with the left-
4 diagonal cross-hatch symbol, e.g., 1147, corresponds to a delivery of the Subject Parcel
5 supported by the Carrier "FedEx."

6 Further, as depicted in FIG. 42, the color for the Carrier identified as "UPS" is
7 depicted in the color coding legend 1062 with a vertical cross-hatch symbol 1142.
8 Accordingly, each Carrier cell entry contained within the Graphic Array with the vertical
9 cross-hatch symbol, e.g., 1148, corresponds to a delivery of the Subject Parcel supported by
10 the Carrier "UPS."

11 Similarly, as depicted in FIG. 42, the color for the Carrier identified as "USPS" is
12 depicted in the color coding legend 1062 with a horizontal cross-hatch symbol 1143.
13 Accordingly, each Carrier cell entry contained within the Graphic Array with the horizontal
14 cross-hatch symbol, e.g., 1149, corresponds to a delivery of the Subject Parcel supported by
15 the Carrier "UPS."

16 In the embodiment of the Graphic Array depicted in FIG. 42, the Graphic Array is
17 dynamically dimensioned. For instance, only the dates and days (1063-1 through 1063-3) for
18 which delivery that conforms to the particular Shipper's Parcel Specifications for the
19 particular Subject Parcel are displayed across the top of the graphic. For example, for the date
20 Tuesday, September 28, 1999 (1063-1), at the time 5:00 p.m. (1064-6), no Carrier supports
21 delivery of the Subject Parcel.

22 Further, as depicted in FIG. 42, only the times (1064-1 through 1064-6) during which
23 at least one of the Carrier/Services identified as supporting the delivery are displayed along the
24 viewer's left side of the Dynamically Dimensioned Multi-Carrier Graphic Array online
25 display.

26 Still further, as depicted in FIG. 42, a Carrier cell entry, e.g., 1065, is displayed for
27 each of, but only for each of, the Carriers/Services that support delivery for a particular day
28 and time in the cell of the Graphic Array that represents delivery on a particular day and at a
29 particular time. When the circumstances require, the System displays one or more Carrier cell
30 entries in a single cell. For instance, cell 1071-3-1 contains two entries, 1065 and 1149;

1 whereas cell 1071-1-1 contains only a single cell. Accordingly, as depicted in FIG. 42, the
2 cell size expands vertically to accommodate multiple Carrier cell entries.

3 In the exemplary embodiment depicted in FIG. 42, the color-coding legend 1062 for
4 each of the Carriers/Services represented in the Graphic Array is displayed with color-coding
5 graphic elements (1140a through 1143a) and identification labels (1140b through 1143b) for
6 each relevant Carrier/Service along the viewer's right side of the rating and timing graphic.
7 Alternatively, instead of the printed name, the logo for the particular Carrier/Service can be
8 displayed. As another alternative, the Carrier/Service logo can be displayed in color in the
9 color-coding legend 1062.

10 The particular arrangement of the color legend 1062 depicted in FIG. 42 and the
11 particular colors used in the color legend depicted therein are exemplary and are not a
12 limitation of the invention. In an alternative embodiment, instead of using color, other visually
13 distinctive methods are used to differentiate between different Carriers/Services. For instance,
14 other visually distinctive methods of Carrier/Service differentiation include but are not limited
15 to: three-dimensional texture effects, other three-dimensional effects, two-dimensional
16 markings (for instance, dots, cross-hatching, and the like), lighting effects, graphic symbols
17 (for instance, the logos of the Carriers/Services) and any combination of the aforementioned
18 features with color.

19 In the embodiment of the Graphic Array depicted in FIG. 42, the exemplary Graphic
20 Array is depicted as horizontally wide enough to accommodate seven delivery days (1063-1
21 through 1063-7) within a particular delivery timespan. The depiction in FIG. 42 of the
22 Graphic Array as a fixed size accommodating up to seven delivery days is exemplary and is
23 not a limitation of the invention. In alternative embodiments, the Graphic Array online display
24 collapses or expands in total size to reflect the actual number of rows and columns that need to
25 be present in order to display the Carrier cell entries for the Carriers/Services that support
26 delivery of the Subject Parcel according to the Shipper's Parcel Specifications.

27 The arrangement as depicted in FIG. 42 of the parcel delivery days and dates (1063-1
28 through 1063-7) across the top and the parcel delivery times (1064-1 through 1064-6) along the
29 left side of the Graphic Array is exemplary and is not a limitation of the invention. In one
30 alternative embodiment, the parcel delivery days and dates are displayed across the bottom,

1 and the parcel delivery times are displayed on the viewer's right side, of the Graphic Array.
2 In other alternative embodiments, the parcel delivery days are arranged on one of the two sides
3 of the Graphic Array and the parcel delivery times are arranged along the top or the bottom of
4 the Graphic Array. In such an alternative embodiment, the cells of the Graphic Array are
5 expandable horizontally to accommodate the appropriate number of relevant Carriers/Services.

6 As depicted in FIG. 42, the Shipper is asked to input the Expected Ship Date 1060. In
7 the exemplary embodiment depicted, a drop down menu activation mechanism 1061 provides
8 the Shipper the ability to activate a pull down menu (not shown) of seven entries beginning
9 with the current date and includes the six days immediately following the current date. The
10 format used is "M/D/YY - Day name". "Today" and "Tomorrow" are displayed appropriately.
11 The number of entries provided by the selection mechanism, the format of the Expected Ship
12 Date, and other features described herein are exemplary and are not a limitation of the
13 invention.

14 In the exemplary embodiment depicted in FIG. 42, once the Shipper selects the
15 Expected Ship Date, the System uses the Expected Ship date and the other information
16 provided by the Shipper, such as in the screen depicted in FIGS. 25 and 41 described above, to
17 access the Carrier Rules, apply the Carrier Rules, and prepare the Graphic Array containing
18 the delivery prices and delivery times for the Subject Parcel according to the Shipper's Parcel
19 Specifications. The System will then generate the signals necessary to display the Graphic
20 Array and cause the Graphic Array to be displayed on the Shipper's PC.

21 Once the Graphic Array is displayed, the Shipper can change previously input
22 information and the System will automatically regenerate the Graphic Array with the delivery
23 rates and delivery times that have been updated to reflect the new information. For instance, if
24 the Shipper selects a new shipping date, the System will regenerate the Graphic Array with the
25 appropriate new rates and times. The logic for regenerating the Graphic Array is described in
26 more detail below.

27 In the exemplary embodiment depicted in FIG. 42, a Ship Location Type drop down
28 menu activator 1067 is located below the Graphic Array. The particular location of the Ship
29 Location Type selection mechanism as described herein is exemplary and is not a limitation of
30 the invention. If the Shipping Location class is a "ship center", a "Find Location" button 1068

is displayed next to the drop down menu. In order to open the Drop Off Locator in a pop-up window, the Shipper places the Shipper's PC cursor on the "Find Location" button 1068 and clicking the Shipper's user input device. The Origin Zip Code and Ship Location type values supplied by the Shipper are used as parameters for the Drop Off Locator to locate a list of possible Drop Off Location choices. The Shipper can select a Drop Off Location from the Drop Off Locator menu. The system dynamically responds to changes by the Shipper to Origin Zip Code and Ship Location type to present choices of Drop Off Location choices.

Navigational buttons appear at the bottom of the Rates and Times Screen depicted in FIG. 42. Clicking the "Back" button 1070 will return the Shipper to the previously displayed screen. Clicking the "Next" button 1054 will cause the next screen to be displayed but only if the Shipper has selected a particular Carrier cell entry. For example, if the Shipper clicks on a particular Carrier cell entry such as 1065, the System will allow the Shipper to then click on the "Next" button 1054 and proceed to, e.g., print a Traveler Label, as depicted in FIG. 56.

If a user returns to the Rates and Times Screen (FIG. 42) from any of the Specification Screens, e.g., FIGS. 25 and 41, any Specification changes will effect the displayed rates.

Using the subject parcel's Parcel Specifications, the System is programmed to access databases containing information about each supported Carrier. Each supported Carrier has a unique rating schedule, delivery and pickup rules and schedules, and certification requirements (the "Carrier Rules"). The System is further programmed to apply each supported Carrier's Rules to each Shipper's Parcel Specifications for the corresponding Subject Parcel. The System calculates the Shipping Charges based on zip-to-zip pricing where the Seller has provided the origin zip code and the Buyer has provided the destination zip code.

To develop the rates for display in the Graphic Array, the System rating component is instantiated in the server-side script such as described above. The rating component's rate information method is invoked with the rate parameters embedded in the URL. Based on Carriers' business rules, the rates and their service option charges for all Carriers/Services are calculated from each respective Carrier's zone data, service/delivery time data and rate data.

The System keeps the Carrier data up-to-date in the System database 22. The application does not use any carriers' Application Program Interface (API) functions to get the

rate information. All of carrier rate data is stored in the System database 22 and all business rules to calculate the rates are implemented within the System.

FIGS. 43, 44a through 44b, and 45 are high level data retrieval and logic flow diagrams depicting the data and high level logic that the system uses to calculate a shipping rate. As depicted in FIG. 43, the following shipping information is used to calculate a shipping rate: Origin postal code, Destination postal code, Weight, Packaging, Drop off / Pickup, Country code 3001. For each Carrier 3002, the rating component of the System uses the origin and destination postal codes 3003. The rating component of the System obtains 3003 the zone id from the zone table 3008 and gathers 3004 the time for deliveries for all available services from the service delivery time table 3009. From the rate table 3010, the rating component obtains services charges for the zone ID, packaging type and weight 3005. For each service, the rating component gathers all possible service options charges 3006. After gathering necessary information, the rating component returns an array of rate information 3007. Each element in the array represents a Carrier/Service and consists of service charge, service option charges, and delivery times.

The System calculates the rates according to the following overview logic as depicted in FIGS. 44a-44b. The System retrieves all rate IDs (published, net, and retail) by joining the following database tables on the System's AccountNo: AccountAndCarrierAcnt; CarrierAccount; RateDefinition 3020.

The System then determines the billing rules for all of the Carrier/Service combinations and their service options by joining the following tables on CarrierID, ServiceID, and ServiceOptionID: BillingOption; BillingOptionAndService; BillingOptionAndServiceOption 3021.

For each carrier 3022, the System performs the following procedures: 1) determine if the particular carrier supports the given billing option based on step 2 3026. If not, continue with the next carrier 3027; 2) Apply carrier business rules, including: a) Calculate dimensional weight 3023; b) Determine billable weight 3024: actual weight, dimensional weight, oversize weight or letter weight; c) Validate package weight and dimensions 3025; (If the rate input violate carrier business rules 3026, continue to next carrier 3027); 3) Determine the zone ID from CarrierZone table for the given origin/destination postal codes 3028; 4) Determine

1 service delivery times 3029 (including Saturday/Sunday delivery times) by joining the
2 following tables on destination postal code: a) CarrierDeliveryArea; b)
3 CarrierServiceDelTime; 5) Determine all service charges from CarrierRate table by RateID,
4 ZoneID, ServiceID and Weight 3030; 6) Determine the service option charges for each
5 Carrier/Service 3031 by joining the following tables on CarrierID and ServiceID:
6 ServiceOption; ServiceOptionAttribute ServiceAndServiceOption; and 7) Apply billing option
7 to service option charges 3032 (different service option charges could be billed to different
8 parties for various billing options).

9 As depicted in FIG. 45, the expected delivery times for each Carrier/Service returned
10 in the rate information determine the placement of the rate grid for the particular
11 Carrier/Service cell: the delivery date determines the columns 3040 while the delivery time
12 resolves the rows 3041. In the event that multiple rate entries collide 3042, the alphabetical
13 order of the particular Carrier's name is further used to determine the Graphic Array entry
14 order within the same date and time bucket 3043. The same Carrier/Service can be placed in a
15 second time slot in the grid under Saturday or Sunday column 3045 if the Saturday or Sunday
16 delivery is applicable to the particular Carrier/Service 3044.

17 18 d.) Generating the Graphic Array

19 FIGS. 46a through 46c are simplified flow diagrams depicting the initial Timing and
20 Rating procedure to generate a Graphic Array in an exemplary embodiment of the invention.
21 In the embodiment of the invention depicted in FIGS. 46a through 46c, the functions of the
22 Shipper entering shipping information 1150, displaying errors to the Shipper that insufficient
23 shipping information has been provided and prompting the Shipper for additional information
24 1153, and displaying the Carrier/Service rate and time graphic 1160, are all processed by the
25 Web Browser at the Client. In the embodiment depicted, all other functions and processes
26 depicted in FIGS. 46a through 46c are performed by one or more of the System Servers.

27 It should be noted that the depicted separation of functions between the Web Browser at
28 the Client on the one hand and the System Servers on the other hand represents an initial
29 procedure to construct the Graphic Array in response to initial Shipper input of Shipper Parcel
30 Specifications. As is explained in more detail below, after the initial construction of the

1 Graphic Array, the System can distribute certain of the functions for supplemental regeneration
2 of the Graphic Array to the Web Browser Client.

3 As depicted in FIG. 46a, the Shipper (User) enters shipping information (Shipper
4 Parcel Specifications) 1150. The System validates the shipping information 1151.

5 In the embodiment depicted, at a minimum, the System requires Source Postal Code,
6 Destination Postal Code, Parcel Weight, Type of Shipment, and the Shipping Location in order
7 to determine a timing schedule and rates for each supported Carrier. If the Shipper has not
8 provided at least these minimum specifications, then the System displays error messages 1153
9 prompting the Shipper to input further Shipper Parcel Specifications 1150.

10 If the Shipper has supplied the minimum required specifications, then the System
11 accesses the Shipper Database 1195 to identify any user-specified Carrier designations and to
12 determine the Carrier accounts for the appropriate Shipper 1154. Using the Shipper Parcel
13 Specifications, the System then accesses the Carrier Databases (1404a through 1404n) and
14 determines all possible Carrier/Services that support shipping of the subject parcel 1155.

15 It should be noted that in the Enterprise Shipping environment, an Administrator can restrict
16 the identity of Carriers available to be used in the construction of the Graphic Array.

17 The System then examines each Carrier/Service in the set of supporting
18 Carrier/Services 1156. The next step 1157 is a juncture for return of control from a number of
19 points in the System logic and is performed for each Carrier/Service in the set of supporting
20 Carrier/Services.

21 If the System has examined all possible supporting Carrier/Services 1158, the System
22 assembles the Graphic Array from the delivery rate set 1159 and displays the Graphic Array to
23 the user 1160. As was previously explained, the dimensions of the Graphic Array are dynamic.
24 As long as there are further Carrier/Services that remain to be examined in the set of
25 supporting Carrier Services, the System continues to perform the process described below.
26 Using the Expected Shipping Date, the System switches the Carrier/Service's shipping
27 timespan into possible delivery dates and times 1161.

28 Next 1162 as depicted in FIG. 46b, the System determines whether the shipping
29 timespan ends on a Saturday 1163. If so, the System accesses the Carrier Database (1404a
30 through 1404n) to determine whether the particular Carrier/Service supports Saturday Delivery

1 1164. If the particular Carrier/Service does not support Saturday Delivery, then the particular
2 Carrier/Service is eliminated 1177 from the delivery rate set and the System proceeds with the
3 next Carrier/Service in the delivery rate set 1157.

4 If the particular Carrier/Service supports Saturday Delivery, the System determines the
5 appropriate Saturday delivery rate for the particular Carrier/Service 1165.

6 Next, the System determines whether the shipping timespan ends on a Sunday 1168. If
7 the shipping timespan ends on a Sunday, the System accesses the Carrier Database (1404a
8 through 1404n) to determine whether the particular Carrier/Service supports Sunday delivery
9 1166. If the particular Carrier/Service does not support Sunday delivery, then the particular
10 Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the
11 next Carrier/Service in the delivery rate set 1157.

12 If the particular Carrier/Service supports Sunday Delivery, the System determines the
13 appropriate Sunday delivery rate for the particular Carrier/Service 1167.

14 The System then determines whether there is a business day delivery within the
15 shipping timespan 1169. If so, the System accesses the Carrier Database (1404a through
16 1404n) to determine whether the particular Carrier/Service supports business day delivery
17 1170. If the particular Carrier/Service does not support business day delivery, then the
18 particular Carrier/Service is eliminated from the delivery rate set 1177 and the System
19 proceeds with the next Carrier/Service in the delivery rate set 1157.

20 If the particular Carrier/Service supports business day delivery, the System determines
21 the appropriate business day delivery rate for the particular Carrier/Service 1171.

22 The System next determines whether the Shipper has requested E-Mail delivery
23 notification 1172. If so, the System accesses the Carrier Database (1404a through 1404n) to
24 determine whether the particular Carrier/Service supports E-Mail delivery notification 1173.
25 If the particular Carrier/Service does not support E-Mail delivery notification, then the
26 particular Carrier/Service is eliminated from the delivery rate set 1177 and the System
27 proceeds with the next Carrier/Service in the delivery rate set 1157.

28 If the particular Carrier/Service supports E-Mail delivery notification, the System adds
29 the appropriate charge for the E-Mail delivery notification service to each of the particular
30 Carrier/Service's delivery rates 1174.

1 The System then determines whether the Shipper has requested verbal delivery
2 notification 1175. If so, the System accesses the Carrier Database (1404a through 1404n) to
3 determine whether the particular Carrier/Service supports verbal delivery notification 1176. If
4 the particular Carrier/Service does not support verbal delivery notification, then the particular
5 Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the
6 next Carrier/Service in the delivery rate set 1157.

7 If the particular Carrier/Service supports verbal delivery notification, the System adds
8 the appropriate charge for the verbal delivery notification service to each of the particular
9 Carrier/Service's delivery rates 1178.

10 Next 1179 as depicted in FIG. 46c, the System determines whether the Shipper has
11 requested that the Carrier/Service guarantee delivery time 1180. If so, the System accesses the
12 Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service
13 supports guaranteed delivery times 1181. If the particular Carrier/Service does not support
14 guaranteed delivery times, then the particular Carrier/Service is eliminated from the delivery
15 rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set
16 1157.

17 If the particular Carrier/Service supports guaranteed delivery times, the System adds
18 the appropriate charge for the guaranteed delivery times service to each of the particular
19 Carrier/Service's delivery rates 1182.

20 The System then determines whether the Shipper has requested a "Call for Pickup"
21 shipping location 1184. If so, the System accesses the Carrier Database (1404a through
22 1404n) to determine whether the particular Carrier/Service supports "Call for Pickup"
23 services 1185. If the particular Carrier/Service does not support "Call for Pickup" services,
24 then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System
25 proceeds with the next Carrier/Service in the delivery rate set 1157.

26 If the particular Carrier/Service supports "Call for Pickup" services, the System adds
27 the appropriate charge for the "Call for Pickup" service to each of the particular
28 Carrier/Service's delivery rates 1186.

29 The System next determines whether the Shipper has requested a "Residential
30 Delivery" 1187. If so, the System accesses the Carrier Database (1404a through 1404n) to

1 determine whether the particular Carrier/Service supports “Residential Delivery” services
2 1188. If the particular Carrier/Service does not support “Residential Delivery” services, then
3 the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System
4 proceeds with the next Carrier/Service in the delivery rate set 1157.

5 If the particular Carrier/Service supports “Residential Delivery” services, the System
6 adds the appropriate charge for the “Residential Delivery” service to each of the particular
7 Carrier/Service’s delivery rates 1189.

8 The System then determines whether the Shipper has requested “Loss Protection”
9 services 1190. If so, the System accesses the Carrier Database (1404a through 1404n) to
10 determine whether the particular Carrier/Service supports “Loss Protection” services 1191. If
11 the particular Carrier/Service does not support “Loss Protection” services, then the particular
12 Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the
13 next Carrier/Service in the delivery rate set 1157.

14 If the particular Carrier/Service supports “Loss Protection” services, the System
15 calculates the appropriate charge for the “Loss Protection” service and adds the appropriate
16 charge to each of the particular Carrier/Service’s delivery rates 1193 before proceeding with
17 the next Carrier/Service in the delivery rate set 1157.

18 In the exemplary embodiments of the invention described here, the System
19 automatically and dynamically regenerates the display of the Graphic Array and certain
20 portions of other screens when the Shipper makes online changes to Shipper input. To do this,
21 the System generates executable code which it distributes with certain displayable frames to the
22 Web Browser Client. This distribution of code for purposes of regenerating the Graphic Array
23 differs from the initial generation of the Graphic Array as was described above. For example,
24 in the embodiment of the invention depicted in FIGS. 46a through 46c, in the initial
25 development of the Graphic Array, the System distributes the functions that initially generate
26 the Graphic Array as follows: the Shipper entering shipping information 1150, displaying
27 errors to the Shipper that insufficient shipping information has been provided and prompting
28 the Shipper for additional information 1153, and displaying the Graphic Array 1160, are all
29 processed by the Web Browser at the Client; all other functions and processes depicted in

FIGS. 46a through 46c are performed by one or more of the System Servers 20a-21z as shown in FIG. 3.

Distribution to the Web Browser Client by the System of executable code that regenerates the Graphic Array provides the capability to dynamically reflect in the Graphic Array any changes that the Shipper may enter to the various Shipper Parcel Specifications; the Graphic Array immediately displays the new information without requiring the Shipper to request a recalculation, such as by clicking on a "Regenerate" button or the like.

To facilitate regeneration of the Graphic Array, the System generates executable code which it distributes with the frame, such as the frame that is displayed to the user for collecting the Parcel Specifications, to the Web Browser Client. A displayable frame is a set of information for display on the client display device. For example, in FIG. 42, in one embodiment of the invention, a first frame of the screen depicted in FIG. 42 comprises the Title "Rates & Times" 1109a, the instruction "Click on the price to select a delivery date, time and carrier." 1109b, the legend "Date you expect to ship your package:" 1109c, the input field for the Expected Shipping Date 1060, the legend "I'll ship the package from:" 1109d and the input field for the Shipping Location 1066; a second frame of the screen depicted in FIG. 42 comprises the Graphic Array.

As the System generates the display of each frame, the System generates executable code which it distributes with, e.g., the Rate & Times frame, to the Web Browser Client. Thereafter, the Web Browser Client uses the executable code to automatically regenerate the display of the Graphic Array each time the Shipper makes changes to the Shipper Parcel Specifications. In one embodiment of the dynamic regeneration aspect of the invention, the executable code distributed to the Web Browser Client uses JavaScript.

In some cases, the executable code sent to the Web Browser Client provides the information and the capability to regenerate the Graphic Array without any further communication with the Server. In other cases, the Web Client Browser must return control to the Server so that the Server can access data maintained by or accessible by the Server; the Server then regenerates the Graphic Array or otherwise provides the Web Browser Client with the information necessary to regenerate the Graphic Array.

1 In an exemplary embodiment of the automatic dynamic regeneration aspect of the
2 invention, the executable code distributed to the Web Browser Client contains the logic to
3 apply Carrier Rules to Shipper Parcel Specification changes. For instance, Shipper changes to
4 certain Service Options, would be automatically processed by the Web Client Browser and the
5 Web Client Browser would regenerate the Single Day Rate Graphic Array depicted therein to
6 reflect the Shipper changes. In one such automatic dynamic regeneration embodiment, only
7 those functions that do not require further access to the relevant Carrier's database are
8 distributed to the Web Browser Client.

9 It should be noted that, according to the automatic dynamic regeneration aspect of the
10 invention, if after the Shipper views the Graphic Array the Shipper enters changes to any of the
11 factors with which the System calculates the rates and develops the Graphic Array, the System
12 uses a similar logic flow to regenerate the Graphic Array as was explained above in relation to
13 FIGS. 46a through 46c.

14 The dynamic regeneration capability is used to automatically regenerate response
15 screens in many places throughout the System. For instance, if the Shipper changes Origin Zip
16 Code 149 (FIG. 25) and/or Ship Location Type (as selected via 281, FIG. 25), the System will
17 automatically regenerate a list of possible Drop Off Location choices.

18 e.) Creating a Link

19 FIG. 47 depicts an exemplary embodiment of the Create a Link Screen in an exemplary
20 embodiment of the invention. In the embodiment depicted in FIG. 47, the System collects the
21 package specific information input by a User and then presents the screen as depicted in FIG.
22 23 to display the generated hyperlink 320. FIG. 50 depicts the text of an exemplary hypertext
23 link such as is created by an exemplary embodiment of the "Create Link" feature in an
24 exemplary embodiment of the invention.

25 In one embodiment, the System generates an HTML hyperlink by executing a JAVA
26 script routine (in alternative embodiments, other scripts are used). The JAVA routine extracts
27 the User-supplied package-specific information from the Create a Link HTML page (i.e.,
28 Weight, Irregular or Non-Standard Packaging, Loss Protection, Destination Zip code, Link
29 Type and Link Text) and integrates the information with a URL (Universal Resource Locator)
30

1 that points to the address at which a System web page exists, or a series of System web pages
2 exist, that will display shipping cost comparisons for for later use. In one embodiment, the
3 URL information is hard coded in the web page. The hyperlink built by the System contains
4 data as well as an address. In an alternative embodiment, the URL is dynamically generated.

5 In order to create the Link, the System places the appropriate HTML tags and text in a
6 sequence that can be rendered by a web browser. An example of a hypertext link, like the one
7 generated in FIG. 47, that the "Create Link" application creates is depicted in FIG. 50. Some
8 of the text of the Link (a hyperlink) depicted in FIG. 50 is a template. However, several
9 components are customized according to the Seller's and the specific item's information. For
10 instance, the example hyperlink depicted in FIG. 50 contains a variable data item named "K"
11 2210-1 which is set equal to the account number 2210-2 ("A6V1XZ" in this case) of the
12 User/Seller's account 2210. The example hyperlink depicted in FIG. 50 also contains a
13 variable named "W" which is set equal to the weight in pounds of the package to be shipped
14 (in this case "10") 2211; a variable named "V" set equal to the declared value for loss
15 protection of the package (in this case "0") 2212; and a variable named "H" which is set
16 equal to an indicator, which if set to "1", the package has irregular or non-standard
17 packaging, if set to "0" (as in this case), the package is regular with standard packaging 2213.

18 After the System generates the HTML hyperlink, the User can e-mail the HTML
19 hyperlink text 320 (FIG. 47) to someone by clicking on the e-mail this quote link 322 (FIG.
20 47).

21 When the person to whom the email is addressed (the "Recipient") receives the email
22 with the HTML hyperlink text 320, the Recipient can click on the Link in the email and the
23 Recipient's Web Browser will use the URL contained in the Link to locate the appropriate
24 System Web page. The System will be presented with and receive as input the information in
25 the hypertext link, including the variables and their respective contents as described above
26 2210-2213 in connection with FIG. 50.

27 With the input from the hypertext link 2210, the System accesses the System database
28 22 as depicted and retrieves the following types of information: 1) Package origin address; 2)
29 Carriers and services that the Enterprise has authorized for use; 3) Custom and public carrier

1 rates the Enterprise will use; 4) Additional handling charges that the Enterprise wants to
2 impose; and 5) Payment methods the Enterprise will allow the Recipient to use.

3 Using the information as provided by the hyperlink User/Seller's Link and the
4 information obtained as a result of the above-described database access, the System, at the
5 address provided by the URL, is programmed to display the shipping estimate previewed by
6 the User/Seller.

7 FIG. 51 is a graphic representation depicting an alternative embodiment of a hyperlink
8 generated by the System in an exemplary embodiment of the invention. Instead of the hyperlink
9 explicitly containing an Enterprise's account number 2210 and package specific information,
10 e.g., 2211-2213, as depicted in FIG. 50, the hyperlink depicted in FIG. 51 provides a Package
11 Identifier ("PID") 2220. A PID hides Enterprise account information and package specific
12 information from the Recipient by replacing the explicit embedded information with a single
13 string of facially meaningless characters. In an embodiment of the System that generates a PID
14 for each Link, every time a User creates a URL with a PID, the System creates a new and
15 unique PID. Without access to the System database, there is no information in a PID from
16 which to determine a User's or Enterprise's information.

17 The System stores the PID 2220 in a PID table in the System database 22 and stores the
18 Enterprise's account and package specific information, e.g., 2210-2213 with the PID.

19 In another embodiment, the details associated with the Enterprise's account, such as
20 the Enterprise's various shipping preferences, are stored in detail with the PID 2220. Storing
21 detailed information with a PID 2220 provides for additional flexibility in that new Enterprise
22 information can be associated with the new PID while not influencing a previously generated
23 PID and its associated set of information.

24 Once generated, the hyperlink 320 can be copied and pasted by the Desktop User into
25 another system, such as into a catalog of item descriptions. For example, as depicted in FIG.
26 47, the hyperlink can be saved in a Saved Packages List 321. Adding a package to a Saved
27 Packages List provides the User with information with which to populate information about
28 packages with identical parameters sent repetitively to the same customer. In one embodiment,
29 the Saved Packages List is accessible through the Address Book entry for the relevant
30 customer/address book entry.

1 In one embodiment of the invention, the User can name a saved package. FIG. 48 is a
2 graphic representation depicting an exemplary embodiment of the Name a Save Package Screen
3 in an exemplary embodiment of the invention. When the User clicks the Add to Saved
4 Packages List button 321 (FIG. 47), the System displays a pop-up Name a Save Package
5 Screen such as the one depicted in FIG. 48. The User inputs the Package Name 323 and clicks
6 the Save button 325. If the Name of the Package has previously been saved in the System, the
7 System displays an error message 324 in a Name a Save Package Error Screen such as the one
8 depicted in FIG. 49. FIG. 49 is a graphic representation depicting an exemplary embodiment
9 of the Name a Save Package Error Screen in an exemplary embodiment of the invention. The
10 User will then be able to select items from a Saved Packages List which will pre-populate all
11 fields with the data specified by the User to populate the selected Saved Package.

12 9. Payment Methods.

13 The System provides the User with choices of payment methods for paying for the
14 shipping transaction. Payment methods include, for example:
15

- 16 - Bill Sender ("Bill Department")
- 17 - Bill Recipient
- 18 - Bill 3rd Party
- 19 - Bill Credit Card (Yellow Freight only)

20 The System Enterprise Desktop Client captures supplementary billing information supported
21 by the carriers, on both a package- and shipment-level basis, such as:

- 22 - Shipper's Reference 1
- 23 - Shipper's Reference 2

24 The user interface, subject to shipping rules set by the Administrator, assist the user with
25 completing payment methods, where possible, such as, for example, in the following ways:

- 26 - For the Bill Sender option, the appropriate account number for the user
27 is automatically assigned by the System.
- 28 - For the Bill Recipient option, the account number is auto-filled by the
29 System from address book if available.

- The User Interface collects addresses if required for the payment method.

Some Enterprises may set privileges allowing Users to ship personal packages on corporate rates, and get reimbursed via credit card.

Communications between the User's browser and the System are encrypted to protect carrier account numbers and credit card numbers.

10. Service Availability.

The System provides each Enterprise with access to the full spectrum of carriers and services supported by the System.

Certain service types drive additional user interface requirements, such as freight requiring different dialogs to complete the shipping transaction.

The Administrative Client provides a clean way for customers to expose new carriers and services as they become available. New carriers and services default to "off" (not displayed) until turned on by the Administrator.

11. Label printing.

Label printing type is configurable as a shipping rule by the Administrator. The Administrator can delegate shipping label printing authority by type of package and by other criteria. For example, the administrator can enable User printing of:

- Actual carrier shipping labels for letters
- Traveler label for packages

Users, subject to the Shipping rules imposed by the administrator, can laser print carrier shipping labels after consummating a shipping transaction for all carriers with whom the User has label printing permission. For shipping circumstances in which a User is not allowed to print an actual shipping label, Users can print "traveler" labels, which help identify pre-processed packages for mailroom personnel to complete.

The administrator can define the traveler label format to be used. The traveler label includes a bar code that, when scanned, enables quick retrieval of the shipment record from the System by mailroom personnel using the Ship Station client.

Both shipping labels and traveler labels include user instructions on what to do with the package once the label has been printed.

Shipping Stations must be equipped and configured with a bar code scanner to read traveler label bar codes in order to enable the quickest retrieval of shipment data from the System.

a.) Generating a System Tracking Number

If the User creates a Shipping Label such as is depicted in FIG. 52, the System prepares a Carrier shipping tracking number 330 and an internal System tracking number for the item package.

A System tracking number is a unique number generated internally by the System to identify a particular package shipped using the System. The Shipper inputs the Shipper's Parcel Specifications for the Subject Parcel. Using each Shipper's Parcel Specifications, the System is programmed to access databases containing information about each supported Carrier. Each supported Carrier has a unique rating schedule, delivery and pickup rules and schedules, and certification requirements (the "Carrier Rules"). The System is further programmed to apply each supported Carrier's Rules to each Shipper's Parcel Specifications for the corresponding Subject Parcel.

As a result of the Consumer creating a shipping label, the System assigns the package a System package tracking number and adds a record containing all of the pertinent information about the package to the System database 22. Following are exemplary Shipping tracking numbers: MAGGY841VRY50; MAGGY84B496RF; MAGGY84X0FJ45.

In one embodiment, the System Tracking Number is based on a Base-33 number system. The characters available are: Zero (0) through nine (9) and A through Z excluding "I" (i), "L" (l), and "O" (o). Each letter represents a value, as depicted in the table below:

A = 10 F = 15 M = 20 S = 25 X = 30

B = 11 G = 16 N = 21 T = 26 Y = 31

C = 12 H = 17 P = 22 U = 27 Z = 32

D = 13 J = 18 Q = 23 V = 28

E = 14 K = 19 R = 24 W = 29

Each System Tracking Number is 13 alphanumeric characters. Position 1 is the letter 'M'. Positions 2 - 7 are a System Account number. Positions 8 - 12 are a five-digit ID. Position 13 is a Check Digit.

To calculate the Check Digit, the System performs the following steps: 1) Consecutively multiply the numeric value of each of positions 2-7; 2) Consecutively multiply the numeric value of each of positions 8 - 12; 3) Add both results; 4) Divide by 31; 5) Convert the remainder value to a Base-33 number. The converted value is the Check Digit.

b.) Printing a Shipping Label

As mentioned above, in some embodiments, the Shipper can use the System to locally print on the Shipper's printer device a bar-coded shipping label according the Selected Carrier's certification standards. In some embodiments, the bar-coded shipping label, including two dimensional bar code labels, and other types of shipping labels, can be printed on either a thermal label printer or on a laser printer. The Shipper specifies the type of printer to the system during initial setup procedures. Thereafter, the System uses, as appropriate, the thermal printer or laser printer module to prepare the label image for printing on the Shipper's printer.

FIG. 53 depicts a flow diagram of one exemplary embodiment of the aspect of the invention that provides printing of bar-coded shipping labels on printer devices which are compatible with the User's client system on which a web browser is running, such as an HP-compatible laser printer. As depicted in FIG. 53, one of the System Servers, for instance, the Shipping Server, e.g. 21s in FIG. 3, gets the Label Size from the Carrier Label Specification 1250, the Label Layout from the Carrier Label Specification 1251, Label Data from the Shipper Database 1252, and the Label Quality in Dots Per Inch ("DPI") as set by the Server 1253, and uses this information to Generate the Label 1254.

The Server then creates, and causes the display on the client browser's display device of, a text string with a specified font face and in a specified font size in an HTML table data cell with a specified width 1255. If the client browser is using a ninety-six (96) display device DPI, the display device will display said text string in the HTML table data cell in a single line. If on the other hand, the client browser is using a one hundred twenty (120) display

1 device DPI, the display device will display said text string in the HTML table data cell in two
2 lines.

3 In creating the display of the text string, the Server also sends a message to the Shipper
4 asking the Shipper to answer the following question: do you see the text string displayed on
5 your screen as a single line or as wrapped text in multiple lines? The Server receives the
6 Shipper's response and determines from the response whether the Shipper's display device
7 has displayed the text as a single line or as wrapped text in multiple lines 1256. If the text is
8 displayed as a single line, then the client browser 1257 display device DPI is 120. Otherwise,
9 the client browser 1258 display device DPI is 96.

10 Next, the Server calculates the shipping label HTML image size in pixels 1259 by
11 multiplying the Carrier-specified label size from the Carrier Label Specification times the
12 client browser display device DPI as determined by the previous step.

13 Next, the System displays the generated label image in the client browser 1260 with an
14 HTML image tag and an HTML image size in pixels as calculated in the prior step. The client
15 browser calculates the size of the label to be printed in inches by dividing the label HTML
16 image size in pixels as calculated in a prior step by the client browser display device DPI 1261;
17 the client browser then prints out the label with the size calculated 1261.

18 FIG. 54 depicts a flow diagram of an exemplary embodiment of the aspect of the
19 invention that provides printing of dimensionally accurate images, such as dimensionally
20 sensitive symbologies including two-dimensional bar codes and other two-dimensional
21 machine-readable symbologies. This aspect of the invention provides the printing of such
22 dimensionally accurate images on various types of printer devices including among others HP-
23 compatible laser printers. The printer devices can be configured with remote computers, such
24 as PC's, that will receive signals to print the dimensionally accurate image over a
25 communications network such as the Internet. Each PC having a client browser or executing
26 like software, and each PC being configured with a pre-established Image Resolution that
27 applies to the display device and the printer device configured with the PC.

28 As depicted in FIG. 54, the System determines the Image Size 1350, the Image Layout
29 1351, any relevant Image Data 1352, and the Image Resolution in Dots Per Inch ("DPI") or in

1 any other measure of Image Resolution 1353. The System uses this information to generate
2 the Image 1354.

3 Alternatively, the Image has previously been created; the System determines from the
4 Image, the Image Size 1350, the Image Layout 1351, any relevant Image Data 1352, and the
5 Image Resolution in DPI or in any other measure of Image Resolution 1353 (collectively
6 referred to hereinafter as the "Image Characteristics").

7 The System determines the possible Image Resolution Categories and associated values
8 of client PC's 1354. Image Resolution Categories and associated values include information
9 such as the number of text strings, and the length of and characteristics (font face, font size,
10 and HTML table cell width) of each of the identified number of, text strings that must be used
11 to determine the Image Resolution of client display devices 1356.

12 An HTML table cell width is fixed in that the physical width of the display of the
13 HTML table cell does not change depending upon the resolution of the client device; a text
14 string comprised of characters having a particular font and font size has a scalable width,
15 depending upon the resolution of the client device resolution. Use of an HTML table cell to
16 measure the resolution of client devices is not a limitation of the invention. In an alternative
17 embodiment, a graphic element other than an HTML table cell, having a fixed width, is used
18 to measure the resolution of client devices.

19 The possible Image Resolution Categories and values are stored in the memory of the
20 System or in a database table and updated on some basis. In an alternative embodiment, the
21 possible Image Resolution Categories and values are input into the System.

22 The System then analyzes the Image Characteristics, and the possible Image Resolution
23 categories and/or values 1355, and creates the appropriate number of text strings and
24 associated HTML table cells 1356. Each text string is created to have a specified font face, a
25 specified font size, and an associated HTML table cell with a specified width. The computer
26 then causes the display of the text strings in the associated HTML table cells on the remote
27 client PC's display device 1358.

28 In creating the display of the text string, the System also sends a message to the
29 recipient PC asking the user to answer the following question: is the first text string displayed
30 on your screen as a single line or as wrapped text in multiple lines? The System receives the

1 remote user's response and determines from the response whether the remote user's PC's
2 display device has displayed each of the text strings as a single line or as wrapped text in
3 multiple lines (e.g., 1256-1258, FIG. 53). The System then sets the PC's Remote Image
4 Resolution for printing the Image 1359 according to the results of the user's PC's display of
5 the text strings. Next, the System calculates the Remote HTML Image Size in pixels 1360 by
6 multiplying the Image Size times the PC's Remote Image Resolution as determined by the
7 previous step. Next, the System displays the generated image on the display device of the
8 remote PC 1361 with an HTML image tag and the Remote HTML Image Size in pixels as
9 calculated in the prior step.

10 The client browser of the remote PC calculates the size of the Image to be printed
11 ("Remote Print Image Size") in inches by dividing the Remote HTML Image Size in pixels by
12 the Remote Image Resolution 1362; the client browser then prints out the Image with the
13 Remote Print Image Size 1362.

14 In one embodiment of the invention, instead of printing a shipping label at the
15 Shipper's printer, a Package Number is displayed online on a Package Number Screen with
16 notification that the label will be printed at a shipping location previously designated by the
17 Shipper.

18 c.) Printing a Traveler Label

19 In one exemplary embodiment of the invention, the Desktop User is either not
20 authorized by the Administrator to print Shipping Labels, or is limited by the Administrator to
21 printing Shipping Labels for only certain types of packages, e.g., Letters. In such an
22 embodiment, the Administrator enables a Shipping Station for the Desktop User. In some
23 cases, a particular Desktop User may decide to not finalize shipping and delegate the actual
24 shipping to some other user within the Enterprise. For example, if the Desktop User is not
25 certain of the weight of a package, the Desktop User, even if that user has shipping lable
26 printing privileges, may decide to print a traveler label, attach the traveler label to the package,
27 and forward the package to a Shipping Station User to complete shipping.

28 FIG. 55 is a high level System interactivity data and logic flow diagram depicting an
29 exemplary embodiment of the process by which the System completes the information
30

1 necessary to ship a package in an exemplary embodiment of the System using traveler labels
2 delivered to a Shipping Station. The User enters package and shipping information 335 which
3 is stored in the System databases 336. The User requests printing of a traveler label, which the
4 System prints on a printer local to the User 340. The User delivers the package together with
5 the traveler label to the Shipping Station. The Shipping Station then scans in the Traveler
6 Label 341 in order to retrieve the package and shipping information from the System's
7 databases 342-344 to populate the shipping information necessary to rate the shipment and
8 finalize the shipping process and complete a shipping label 345-351. This application is used,
9 for example, where Desktop Users have no way of weighing each package.

10 FIG. 56 is a graphic representation depicting an exemplary Traveler Label in an
11 exemplary embodiment of the invention. As depicted in FIG. 56, a Traveler Label reports
12 Shipping Addresses 363, Package Information Details 364, and an instruction to take the
13 package to the appropriate shipping counter 361. Further, the Traveler Label provides a
14 System Tracking Number 362 and a bar code label 360. When the User delivers the package
15 together with the traveler label as depicted in FIG. 56 to the appropriate Shipping Station,
16 personnel at the Shipping Station scans the bar code 360 in the Traveler Label in order to
17 retrieve the package and shipping information, e.g. 363 and 364, from the System's
18 databases. As was described above in relation to 345-351 depicted in FIG. 55, the System uses
19 the retrieved package and shipping information, e.g., 363 and 364, to populate the shipping
20 information necessary to rate the shipment and finalize the shipping process and complete a
21 shipping label.

22 FIG. 57 is a graphic representation depicting an exemplary Shipping Request
23 Confirmation Screen in an exemplary embodiment of the invention. As depicted in FIG. 57,
24 the Shipping Request Confirmation Screen displays a message indicating a successful shipping
25 request and providing directions for next steps 370. The Shipping Request Confirmation
26 Screen further displays Shipping information details, e.g., 371 and a summary of shipping
27 charges and service options, e.g., 372. In one embodiment, the Shipping Confirmation Screen
28 provides Request Carrier Pickup and Cancel Carrier Pickup onscreen buttons with which the
29 user can electronically request or cancel Carrier pickup of the package being shipped.

12. Special Shipment Processing.

The System Enterprise Desktop Client provides Users with various “special shipment processing” options including, for example:

- Multi-part shipments (defined shipments only)
- Identical shipment to multiple recipients (“copy package data” will be sufficient)
- Future (post-dated) shipments
- Pending shipments (shipments saved “in-process” before label printing)
- Pre-processed shipments (“traveler” label printed, but not carrier label)
- Batch label printing
- Identical shipment to distribution list (with skip recipient)
- Different shipments to distribution list (with skip recipient)
- Batch label printing for multi-part shipments
- Batch label printing for individual pending shipments
- Cancel shipment (delete pending shipment or cancel shipment with printed label)

The special shipment processing options described above drive several user interface features, such as the ability to enter the number of packages in a shipment, enter the effective shipping date for shipment, etc.

In one embodiment, as an alternative to batch label printing capabilities, the System provides methods of easing multiple label printing, such as a “next label” button on the label printing window.

In one embodiment of the invention, use of the Cancel shipment function causes the System to generate a User notification as to whether or not the enterprise will be billed.

The System provides the Administrator with the capability to define what shipment types will have full label printing capabilities vs. traveler label capabilities. The Shipping Station will complete processing of special shipment types, such as multi-piece shipments, pre-processed by the Enterprise Desktop Client.

13. Shipping Rules.

The System Enterprise Desktop Client unobtrusively applies shipping rules to user shipping activities. A list of exemplary shipping rules follows:

- Enterprise site can dictate
 - Availability of carriers in rate grid
 - Availability of carrier services in rate grid
 - Carrier rates used in rate grid
 - Availability of carrier pick-up option
- Destination-based shipping rules (such as defined carrier for particular lane) are deferred
- An Administrator can set a particular Group's privileges to dictate:
 - Availability of carriers in rate grid
 - Availability of carrier services in rate grid
 - Carrier rates used in rate grid
 - Availability of service option fields (i.e. insurance, Saturday delivery, etc.)
 - Availability of carrier pick-up option – Deferred until availability of carrier pick-up
 - Availability of payment options
- Type of shipment can dictate type of label printed, for example:
 - if the package to be shipped is a Letter: the User is authorized to print a Carrier label
 - if the package to be shipped is a Box: the User is authorized to print a Traveler label
- Carrier services can be turned on/off by carrier, such as:
 - Premium delivery options (i.e. FedEx First Overnight)
 - Insurance
 - COD
 - Saturday delivery

The list of shipping rules described above is illustrative and not a limitation of the invention.

Shipping rules do not drive any visible User Interface changes to the User. However, shipping rules effect how the User Interface is generated behind the scenes, so that shipping rules are transparently applied to the User during the shipping transaction. Screens and behaviors may vary as between Users based on the privileges of each user.

Shipping rules are applied to each User based on their authenticated identity and based on the privileges assigned to the group to which they belong or to the individual User.

14. Notifications.

The System Enterprise Desktop Client initiates notifications to the parties participating in each shipping transaction, including, for example:

- Notify recipient (plus up to two others) of shipment initiation, with tracking number and link to Track It. The sender shall be able to add text to a notification.
- Notify sender (plus up to two others) of delivery (Shipment confirmation.) The Administrator shall be able to define the template e-mail for this message.
- Notify sender and recipient (plus up to two others) of carrier shipment pick-up. The Administrator shall be able to define the template e-mail for this message. (In one embodiment, the performance of EOD (End-of-Day processing) triggers “notify recipient” e-mails assuming that EOD for all carriers is performed after the carrier actually picks up the package, thereby eliminating the need for this third notification type.)

The System generates e-mails with summary information about the event, and with links to the System for detailed event information. Web links embedded in e-mail notifications take users to publicly accessible areas of the System.

The System provides Administrators with the capability to broadcast e-mail notifications to their userbase and to provide status messages to their users via the Enterprise Desktop Client main page. The Administrative client allows the administrator to define simple e-mail templates for the notification messages. The Administrative Client also allows the administrator to define the “from” return e-mail address for e-mails generated by the System.

15. End of Day Processing

The System will allow end Users with the proper privileges to perform the end-of-day functions for their site via the System Enterprise Desktop Client. The End of Day capability, if available for a User given their privileges, appear as a separate functional area of the Enterprise Desktop Client. Links to this area appear on both the Enterprise Desktop Client main page and in the shipping log if the User has sufficient privileges and still needs to perform end of day processing. Not all carriers require an explicit EOD.

Depending on the Enterprise, End-Of-Day Processing via the Desktop will likely be run for small offices and branch offices that do not have a mailroom or shipping dock, staffed by personnel who can regularly perform EOD. Depending on the Enterprise, Shipping Station personnel will typically perform EOD processing in larger enterprises.

The System provides the Administrator to allow End-Of-Day Processing to be accessible by a User if the User's group has privileges to perform that function. The Administrator can configure the users (actually which group) can perform the End-Of-Day Processing function.

16. Shipping Log.

The System provides a shipping log. The shipping log is the central point of information for a User's past, current and future shipping history. It is also the central location for Users to obtain tracking information for both inbound and outbound shipments. It provides facilities to view and manage the User's historical and ongoing shipping activities, as well as to obtain shipment tracking information. The shipping log provides various types of information, including, for example:

- Provide summary tracking information
- Display shipment status (delivered, in-transit, label printed, pending, future)
- Display shipment type: inbound/outbound
- Edit shipments for pending shipments or shipments with labels (either carrier or traveler) printed but not manifested

- Repeat shipment to speed processing of commonly performed shipments
- Delete shipments for pending shipments, shipments with labels printed (cancel shipment), or historical shipments (actually, hide shipment)
- Search shipping history (by recipient, by carrier, by service type, by date, by status)
- Sort shipping history (by recipient, by carrier, by service type, by date, by status)
- The user can control the page size of the shipping log, up to a maximum of 100.
- The User Interface uses tabs in order to display different shipment statuses (i.e. pending or historical) and to improve database performance.

Higher-level shipping history and reporting is available to the Enterprise through the Administrative Client.

The shipping log displayable to individual Users is for their personal shipping history. Individual Users without the proper privileges do not have access to aggregate-level shipping history. Higher-level shipping history can be limited by the administrator to be accessible via the Administrator Client.

A Shipping Station can display status for shipments that have a traveler label printed but no carrier label and which are related to that Shipping Station.

17. Inbound Package Tracking.

The System provides the capability to track inbound packages sent by other System users. In an Internet embodiment of the invention, this is the case whether the Shipping System User is a non-Enterprise Recipient or is an Enterprise User in the same or different Enterprise as the Receiving System User. Shipping requests submitted to the System provide, among other things, the Recipient's e-mail address. The System recognizes the Recipient as a System User by checking the e-mail address of every Recipient. If the Recipient is a System User, the System adds the Shipping Request to the Recipient's Inbound Tracking Log and notifies the Recipient the next time the Recipient logs on to the System.

The System provides Users with the capability to view the status of inbound packages separately from outbound packages. Inbound packages sent by other System Users should appear in the shipping log automatically.

18. Other Tracking Capabilities

The shipping log user interface enables tracking reporting, including, for example:

- Outbound packages:
- Shipped packages automatically move to the log for tracking
- A separate tracking window is available for entering tracking numbers generated outside of the system
- View high-level tracking status (default), or
- View detailed tracking status.

The System provides complete tracking and reporting capabilities for packages shipped through it, and for packages for which a Carrier tracking number is known as described below.

FIG. 58 is a graphic representation of an exemplary Track It application 380 Track a Shipment Screen in an exemplary embodiment of the invention. As depicted in FIG. 58, the User enters one or more Tracking Numbers in the Tracking Number fields, e.g., 381a-381e and clicks the Submit button 382 to track one or more packages.

In one embodiment, the Track It application navigation bar provides Track a Package, Track All Packages, Track Pending Packages, Track Shipped Packages, Track Inbound Packages and Perform End of Day options. If the User has the authority to ship packages on behalf of another user, the Track It Navigation Bar also provides a View History option with which the User can specify the Shipped For User's ID in which case the Track All Packages, Track Pending Packages, Track Shipped Packages, and Track Inbound Packages options will display packages shipped for the specified User.

FIG. 59 is a graphic representation of an exemplary Tracking Results Screen in an exemplary embodiment of the invention. The Tracking Results Screen depicts summary report entries for multiple packages 390. Each summary report entry reports, among other things, a status logo, e.g., 391-1a, 391-2a, depicting the status of the reported item, and the System Tracking Number for the item, e.g., 391-1b, 391-2b. Status logos are used to indicate,

1 e.g., Shipped 392-1, In Transit 392-2, Delivered 392-3, and Exception 392-4. FIG. 60 depicts
2 a package reporting an exception status 391-5a through 391-5c.

3 FIG. 61 is a graphic representation of an exemplary Unable to Track Screen in an
4 exemplary embodiment of the invention. As depicted in FIG. 61, a tracking number entered
5 by the User for tracking that is not recognized by the System or any of the Carriers is reported.
6 The System reports the User input tracking number 430, provides the User with a Tracking
7 Number window 431, asks the User to specify the Carrier 432-1 using a Carrier drop down
8 menu button 432-2 and to specify the ship date 433. The User clicks the Submit button 434 to
9 submit the tracking request.

10 FIG. 62 is a graphic representation depicting an exemplary Tracking Information
11 Screen in an exemplary embodiment of the invention. As depicted in FIG. 62, the Tracking
12 Information Screen displays detailed information about the shipment status 395. The Tracking
13 Information Screen provides a link with which the User can request further details about the
14 package 396. The Tracking Information Screen also provides a link 397 allows the User to
15 add the Tracking Number to the User's Inbound Tracking Log. The Tracking Information
16 Screen depicted in FIG. 62 further provides the User with instructions 398 for sending the
17 URL of the tracking information to various e-mail recipients, e.g., 399-1a - 399-1b, and 399-
18 2a - 399-2b, with a message 400. The User can choose to send the URL of the tracking
19 information 402 and/or to send notification when the package is delivered 401. In one
20 embodiment, the Tracking Information Screen provides a Repeat Shipment button. Clicking the
21 Repeat Shipment button will take the User to a Ship It screen and cause the system to pre-
22 populate the shipment and package data fields with the information from the previously shipped
23 package.

24 FIG. 63 is a graphic representation of an exemplary Shipping History Screen in an
25 exemplary embodiment of the invention. In the exemplary Shipping History Screen depicted in
26 FIG. 63, the System provides the User with Track It Navigation options to view Pending 405,
27 Outbound 406 or Inbound 407 packages. The User can specify the Status 408, and/or Ship To
28 Name 409, or Ship Date 410. Clicking the Update button 414 will cause the System to display
29 the History Summary report entries that meet the User's specified reporting criteria.

Each history entry report Status 425, Ship To Name 424, number of packages 426, System Tracking Number 423, Carrier/Service 422, Ship Date 421, and Delivery Date 420. The User can click on any of Status 425, Ship To Name 424, System Tracking Number 423, Carrier/Service 422, Ship Date 421, or Delivery Date 420 to sort the contents of the screen display according to the option clicked.

Each Shipping History entry, e.g., 416, provides an associated tracking checkbox, e.g., 415. To get detailed tracking information for one or more items reported, the User clicks the tracking checkbox for each of the items to be tracked and then clicks the Track It button 418. The User can view the Previous items 411, the currently displayed items 412, or the next items 413 in the Shipping History List.

Users may perform “batch tracking,” i.e. select more than one shipment and track on those shipments. This will improve system performance when the user has up to 100 “trackable” shipments in their log. Users will also be able to track “all.”

Referring to FIG. 3, when a Shipper/User ships a package using the System, one or more of the System’s Servers, e.g., 21s-21z create a new System tracking number. When a new System tracking number is created, one of the System’s Database Servers, e.g., 20a-20n, adds a new package record with the newly created System tracking number to a Package Table 28.

The Package Table 28 resides in the System database 22 and contains package records for System processed packages. An exemplary embodiment of the Package Table contains the following information: 1) Package Tracking State ID; 2) Package Shipping State ID; 3) Actual Delivery Time; 4) Delivered To information; 5) Shipping Date; 6) Carrier Tracking Number; 7) System Tracking Number; 8) Carrier ID; 9) Actual Package Weight; 10) Service Description; and 11) Package OID. The content of these fields are described further below.

The Package Tracking State ID specifies the tracking state of the package. In an exemplary embodiment of the invention, there are four different tracking states: 1) Null (New Packages or Shipped Packages); 2) Manifested (at the end of each day, package information is moved to the Package History Table for tracking purposes); 3) In Transit (The Carrier has picked up packages); 4) Delivered (Packages have been delivered to the shipping destination).

1 The Package Shipping State ID specifies the shipping state of a package. In an
2 exemplary embodiment of the invention, there are two different shipping states: 1) Shipped
3 (New Packages or Shipped Packages); 2) Manifested (at the end of each day, package
4 information is moved to the Package History Table for tracking purposes).

5 The Actual Delivery Time specifies the Date/Time that the package was actually
6 delivered. The Delivered To information identifies the person or place to which the package
7 was delivered (e.g., left with receptionist, receptionist front desk, or guard). The Ship Date
8 specifies the date on which the Carrier picked up the package. The Carrier Tracking Number
9 identifies the Carrier-specific package tracking number. The System Tracking Number
10 specifies the unique Package tracking number internally generated by the System (each System
11 tracking number corresponds to exactly one Carrier-specific tracking number). The Carrier ID
12 specifies an identification code for the particular Carrier. The Actual Package Weight specifies
13 the actual weight of the package as opposed to the billed weight. The Service Description
14 describes the type of services used to ship the package e.g., Overnight, 3 Day Ground, Second
15 Day Air, etc. The Package OID contains a Globally Unique Identifier ("GUID") for each
16 package.

17 When the System creates a new package record, the record remains in the Package
18 Table 28 during an initial period of time, for example, the first day during which the record is
19 created, so that the Shipper/User can modify information about the package or void the
20 package record as appropriate. In an exemplary embodiment of invention, the System performs
21 certain processing on a periodic basis, such as at the end of each business day. This type of
22 processing is referred to herein as "End Of Day" processing. In an exemplary embodiment of
23 the invention, during "End of Day" processing, the System removes all new package records
24 from the Package Table 28 and moves the records to a Package History Table 29 which also
25 resides on the System Database 22. In an exemplary embodiment, Package History Table 29
26 records contain the same data fields as described above regarding Package Table 28 records.

27 FIG. 64 is a graphic representation of a Shipper online user input screen that is
28 displayed on the Shipper's display screen 10 (FIG. 2). If a Shipper/User wants to track a
29 particular package, the Shipper/User enters the tracking number that identifies the particular
30 parcel package of interest in the "Enter tracking number" field 2035. It should be understood

1 by someone with ordinary skill in the art that the User may be someone other than the Shipper.
2 For instance, the User may be a Recipient who wishes to track a package being sent to the
3 user. Once the User has entered a tracking number, the User submits a request to track the
4 particular package identified by clicking on the Submit button 2036.

5 FIG. 65 is a logic flow diagram that depicts the high level logic for tracking the status
6 of a particular package. The User enters 2018a and 2018b a tracking number 19 in the
7 tracking number field 2035 (as was shown in FIG. 64). The System first validates 2050 the
8 tracking number 19. The System performs the validation process by attempting to access the
9 record on the System database 22 that is associated with the tracking number 19. To do this,
10 the System requests that a System database server, e.g., 20a (as depicted in FIG. 3) locate and
11 retrieve the package record that is associated with the tracking number 19. The System
12 database server, e.g., 20a, uses the entered tracking number 19 to search the System database
13 22 to locate and retrieve the specified package record. In one embodiment, the System
14 database server, e.g., 20a, is programmed to perform database accesses using Sequel 7.0.

15 Through the validation process, the System determines whether the tracking number 19
16 is a System tracking number or a Carrier tracking number. Below are examples of Carrier
17 tracking numbers.

18 UPS - 1Z8595610344113190

19 Airborne - 3918984344

20 FedEx - 811152682326

21 USPS - EJ585489546US

22 Yellow Freight - 2100003475

23 If a user enters a Carrier tracking number as the tracking number 19, then depending
24 upon the status of the package, or the number of times that the package was tracked, there may
25 be no information in the System database 22 for the Carrier tracking number. In such a case,
26 the System then uses algorithms provided by each Carrier to determine the Carrier
27 identification.

28 If the System determines that there is information about the package on the System
29 database 22, then the System analyzes the Package Shipping State. If the Package Shipping
30 State of the retrieved record is “Manifested” or “In Transit” and the Package Tracking State

1 is not “Delivered”, then the System prepares to track the package using the appropriate
2 Carrier system. If the Package Shipping State of the retrieved record is “Delivered”, or other
3 final status, then the System reports the status of the package to the user.

4 If the tracking number 19 is a valid System tracking number, then the System extracts
5 the Carrier’s tracking number and Carrier’s ID from the package record retrieved from the
6 System database 22 before issuing a request 2054. Otherwise, if the tracking number 19 is a
7 Carrier tracking number, then the System extracts the Carrier’s ID from the package record
8 before issuing a request 2052 to the Carrier’s Internet system. The System uses the Carrier’s
9 ID to retrieve from the System database 22 the Internet URL for the Carrier’s Internet web
10 site. The URL information is configurable.

11 Returning for a moment to FIG. 3, using the Carrier’s Internet URL, the System then
12 makes an HTTP connection to the Carrier’s web server, e.g., 23-2 through 27-2, using the
13 URL information for the particular Carrier’s web server. Depending upon the Carrier, the
14 System’s 1 request and report interface with the Carrier’s web server is programmed in
15 HyperText Markup Language (“HTML”), Extensible Markup Language (“XML”), or both
16 HTML and XML. FIG. 66 depicts an exemplary XML formatted request for submitting a
17 tracking request to a Carrier. FIG. 67 depicts an exemplary successful tracking response, also
18 in XML format, returned by the Carrier.

19 Then, as depicted in FIG. 65, the System transmits the Carrier’s tracking number over
20 the HTTP connection (2052 or 2054). The System instructs the Carrier’s web server as to
21 what information is requested based on the connection made using the URL.

22 If the Carrier’s web server successfully responds 2055 to the System’s 1 tracking
23 request, the System disconnects from the Carrier’s web server and parses the response data.
24 Some Carriers’ response data contains unnecessary text information. The System strips out
25 all of the unnecessary text in order to parse the relevant information.

26 If the System database 22 does not have any previous record of the package, such as
27 would be the case if the package had not been shipped using the System shipping application,
28 then the System does not store any data about the package in the Package Table or the Package
29 History Table.

1 Otherwise, the System then updates the System database 22 and reports the information
2 to the Shipper/User 2056. If the package is reported as delivered, the System populates the
3 Package History Table 29 in the System database. As was previously mentioned, in an
4 exemplary embodiment, Package History Table 29 records contain the same data fields as
5 described above regarding Package Table 28 records.

6 If the Carrier's Internet web server returns an unsuccessful report, the System reports
7 the failure to the User. If the Carrier's system successfully returns tracking information, then
8 the System displays the package's current status.

9 In an alternative embodiment, if the tracking number 19 is a Carrier tracking number,
10 the Server will validate that the Carrier tracking number is a valid tracking number. If the
11 Carrier tracking number is not a valid number, the Server will return an invalid tracking
12 number error. If the Carrier tracking number is a valid number, the Server will not attempt to
13 match the number to a manifested package; the Server will track the package using the
14 particular Carrier's Internet tracking routine; and will return the tracking response to the Web
15 Client of the requesting Shipper/User.

16 In an alternative embodiment, if the tracking number 19 is a System tracking number,
17 then the System validates the System tracking number to ensure that it is a valid System
18 tracking number. If the System tracking number is not a valid tracking number, the Server
19 will return an invalid tracking number error. If the System tracking number is a valid tracking
20 number the Server queries the System database 22 to find the Carrier tracking number which
21 corresponds to the System tracking number. If no package record is found for the System
22 tracking number, then the Server will return an error to the Web Client of the requesting
23 Shipper. The error message will indicate that no package record was found; it will request the
24 user to verify that the tracking number was from a package which had been dropped off notify
25 the user that a package be tracked on the same day it shipped. If the package record is found
26 and the actual ship date is the same as the current date, the Server will return an error to the
27 Web Client of the requesting Shipper indicating that the user/Shipper cannot track the package
28 on the same day it is shipped.

29 In this alternative embodiment, once the Server has identified the Carrier tracking
30 number, the Server will track the package using the Carrier's Internet tracking routine. If the

1 tracking response from the Carrier's Internet tracking routing indicates an error, the Server
2 will make another attempt to track the package through the Carrier's Internet tracking routine.
3 If the second tracking request results in an error, the Server will notify the Web Client of the
4 requesting Shipper that the Carrier is unable to track the package, and will log a tracking
5 request error containing the Error Log number, the System tracking number, the Carrier
6 tracking number, the time and date the tracking request occurred, the error response reported
7 by the Carrier, and the Account Name of the user/Shipper making the tracking request, if that
8 information is available.

9 If, on the other hand, the Carrier returns a valid tracking response, the Server will
10 update the package status in the Server Database with the tracking response and will return the
11 detailed package information to the Web Client of the requesting user/Shipper from the System
12 Database as described below.

13 If the user supplied a Carrier tracking number, the Web Client will display the basic
14 tracking information provided by the particular Carrier's Internet tracking function. In one
15 embodiment of the invention, when the user provides a Carrier tracking number to track a
16 package, the user/Shipper's Web Client requires the user/Shipper to identify the Carrier.

17 If the user/Shipper provides a System tracking number, then if the user/Shipper is
18 logged on to the account, or otherwise enters valid logon information, that information must
19 correspond to the Account which shipped the package. In that case, the user/Shipper's Web
20 Client will display the following information: System tracking number; recipient address; drop
21 off location; Carrier and service; Carrier tracking number if available; actual ship date if
22 available; delivery address if available; delivery location if available; delivery date if available;
23 delivery time if available; signed for by information if available; package rate; package weight;
24 package dimensions; packaging; customer reference information; all scan activity.

25 If on the other hand, the user/Shipper is not logged on to the account, fails to enter
26 valid logon information, or is logged on to an Account which does not correspond to the
27 Account which shipped the package, the user/Shipper's Web Client will display the following
28 information: System tracking number; recipient contact name; recipient company name;
29 Carrier and service; Carrier tracking number if available; actual ship date if available; delivery
30 address if available; delivery location if available; delivery date if available; delivery time if

1 available; signed for by information if available; package weight; customer reference
2 information; all scan activity.

3
4 19. PriceIt for Enterprise.

5 The System provides enterprises with the ability to rate shipments outside of the context
6 of a shipping transaction. This rating tool is used to estimate shipping charges to external
7 customers, or to rate shipments that are not yet in the System for actual shipping. The PriceIt
8 tool displays the customer's custom rates.

9 The user interface is the same as the rate interface provided in the Shipping tool.
10 PriceIt rules are applied to the carriers and services that appear. The System provides the
11 Administrator with the capability to define rules for the PriceIt tool separately from the
12 shipping tool. For example, users who are getting shipping charge estimates for customers may
13 not actually have access to the service they are quoting rates on. Accordingly, the System
14 calculates, for each carrier authorized by an administrator of an enterprise for use by a
15 particular user within the enterprise, enterprise shipping rates and custom customer shipping
16 rates in response to a rating request by the particular user for shipping a particular package.
17 The System also provides the Administrator with the ability to hide the PriceIt tool altogether.

18
19
20 20. Customer System Integration.

21 In one embodiment, the System is integrated with such enterprise systems as:

- 22 - Authentication databases
- 23 - Corporate directories/address books
- 24 - Internal receiving and tracking systems (RIPIT, A2B)
- 25 - Internal product databases
- 26 - Accounting systems for chargebacks

27
28 21. International Shipping.

29 In one embodiment, the System handles international destination shipping, including:

- 30 - International carriers, such as DHL, FedEx, and UPS

- International document shipments
- International parcel shipments, including document preparation
- Shipper's Export Declaration
- Commercial Invoice
- Export compliance system integration

22. Request Carrier Pick-up

In one embodiment, the System provides the capability to electronically request a pickup from Carriers. This option is a configurable option that the Administrator can enable/disable on an enterprise site-specific basis.

ILLUSTRATIVE EMBODIMENTS

Although this invention has been described in certain specific embodiments, many additional modifications and variations would be apparent to those skilled in the art. It is, therefore, to be understood that this invention may be practiced otherwise than as specifically described. Thus, the embodiments of the invention described herein should be considered in all respects as illustrative and not restrictive, the scope of the invention to be determined by the appended claims and their equivalents rather than the foregoing description.